

Data Usage in a Population Health Project



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Population Health Projects



- In xx/xxxx, the RCHN Community Health Foundation funded 7 projects at CHCs to design & carry out population health projects.
 - Funding was provided for 6 CHCs & 1 PCA
 - Projects ranged from smoking cessation to homeless care management to improving pediatric care to reduce ED usage
- One CHC, ACCESS Family Care in southwest Missouri, focused its project on integrating comprehensive diabetes care with their PCMH effort
- Debra Davidson from ACCESS will talk about this project & its data elements, but first

Data Use in CHCs



- CHCs are being called upon to collect & use more & more (& more) data
- MU, MIPS & especially public & population health efforts require the acquisition, management, analysis & interpretation of substantially more data in the health center's decision process
- Use of EHR data for care planning & optimization for individual patients is well known, but...
- How is data used for population health efforts?

Using Data Requires Data Awareness



- Data Awareness is required today & will be even more so in the next 3-5 years
- Being Data Aware means knowing what data your health center has available, both internal & external
- Knowing what form the data is in, including some consideration of its quality
- Knowing what analyses are available to apply to this data & how to execute these analyses
- Most importantly, knowing the strategic issues that your center needs to address & determining how the data & analyses available can facilitate the planning & strategy process

Using Data - 2



- Data awareness is, at its most basic, the knowledge of what data is available & how to analyze & interpret it so that it can be used in strategic decision making **across** all levels of an organization
- Data can also be used for pure exploration, that is to see **if there are patterns in the data** that can be associated with observations that help us improve clinical outcomes or operational efficiency
- Data awareness is not just for Executives & Managers – it's for everyone in the organization, everyone should be able see data & make observations about it.
- Data is primarily for decision making: clinical, operational, **financial** any decision

~~Big Data? Little Data?~~ Right Data



- Much has been made of 'Big Data' & it can be very interesting & valuable for healthcare, but... Few organizations have truly big data (>50 PBs)*: DoD, VA, Kaiser Permanente, Partners, not many others
- It is much more valuable to have data that's relevant to the questions you're asking & to the strategic decisions you are making... regardless of how much data this is
- The real value in analysis is aligning the questions you are asking with the decisions you have to make & the strategy you are developing & following

*Fig. comparison – the entire digitized collection of the Library of Congress is ~2PBs; a PB is ~223,000 DVDs of data

What Data are We Talking About



- Internal Data
 - EHR & other clinical data (registry, Pharmacy, Labs, etc.)
 - Financial (cost accounting, ledgers, AP/AR)
 - Other internal ()
- External Data
 - External clinical data (HIE, ACO, eReferral, other...)
 - State public & population health data
 - Federal public & population health data (CDC, HRSA, etc.)
 - Academic public & population health data (universities, institutes, etc.)
 - Federal & State macroeconomic, demographic & population data
- Other (that we don't know yet...)

Larger Amounts of Data Required



- Most CHCs has 5-10 GBs of EHR & up to 5 GBs of other data (financial, cost accounting, registry, pharmacy etc.)
- Most PCAs have ~250GBs of EHR data & 100GBs of other data (as above)
- Each expected to double or triple in the next 2-3 years plus need to include an additional 20-25GBs of external data (public health, macrodemographic (State & Federal), macroeconomic (State & Federal) data
- At that point, each CHC would have ~50-75 GBs of total data, while the PCA will have ~1TB (1024 GBs, 10^{12} bytes) at this time
- In 10 years, each CHC might have ~multiple TBs & the PCA might have up to hundreds of TBs of data
- Some healthcare organizations today have multiple PBs (1024 TBs, 10^{15} bytes): Kaiser: 40-50 PBs, Partners: 20-25 PBs
- **This amount of data will be difficult to impossible to store, manage, search & analyze by current - even evolved current methods**

OK – Back to Population Health



- Chronic & acute disease occurs in individuals & in populations
 - Treating individuals may optimize their specific outcome, but does not address systemic &/or population aspects
- Ideally we would use our knowledge of patterns of occurrence in populations to inform our treatment of individuals (intervention)
- There are a number of steps that enable us to get started – detailed in the next slide
- Population health is one of the MIPS quality measurement areas, so this is getting more important

Population Health Efforts – Getting Started



- Ensure that IT infrastructure supports external data acquisition, data sharing, very large-scale data storage (at least PB range), data query & analytics for this amount of data
- Characterize patterns of social determinants & chronic disease occurrence (analysis of EHR & sociodemographic data)
- Integrate public & population health data with clinical & sociodemographic data
 - Sources include: CDC FastTrack (diagnosis percentages, general population), CMS (iBlueButton, Medicare Limited Data Set), FDA (openFDA, FAERS), State sources
- Execute planned analyses for population health efforts in the CHCs specific data
- Plan & execute an engagement & intervention strategy



Debra Davidson COO at ACCESS
Family Care in SW Missouri will
present a project in progress on
diabetes management



Thanks!

Please feel free to contact us
for more information

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Improving Patient Health Outcomes

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The logo for ACCESS FAMILY CARE is displayed within a white rectangular box. The word "ACCESS" is written in a bold, blue, sans-serif font, with a stylized orange swoosh underline that extends to the right. To the right of "ACCESS", the words "FAMILY CARE" are written in a smaller, blue, sans-serif font.

ACCESS FAMILY CARE

Why ACCESS uses data

- Grant Reporting
 - **HRSA Funding Application and NEEDS Assessment**
 - **HRSA 330 annual report = UDS requirements**
 - **Primary Care Association (MPCA) facilitated grants**
 - ✓ Behavioral Health Integration
 - ✓ Women and Minority Health and Show Me Healthy Women (CDC – breast and cervical cancer initiative)
 - ✓ Chronic Disease Collaborative
 - ✓ Dental Integration
 - ✓ Pharmacy Integration
 - ✓ Emergency Preparedness
 - **Other Organizations**
 - ✓ Missouri Foundation for Health, MO HealthNet, DentaQuest, RCHN
- Health Outcome Improvement
 - Chronic Disease s
 - Cancer Screenings
 - Health Maintenance
- Financial
- Patient Satisfaction
- Compliance
- Bonus - Incentive

ACCESS' Data History

- Chronic Disease Collaborative Health Outcome Improvement (through MPCA)
- ✓ 2008: ACCESS listed changes in organization structure that affected the quality improvement of chronic disease management for DM and CVD @ FQHC per clinic
 - PDSAs introduced, documentation of barriers and actions
- ✓ 2009 - 2010: EHR (GE Centricity) adaptation began September, 2009 one clinic at a time
 - Only had 3 medical clinics at the time of implementing EHR, 3rd clinic live Spring 2010
- ✓ 2010 - 2011: manual chart audits, 10 charts/qtr/provider designed to quantitatively capture related data points
 - Started with the UDS Measures and each FQHC was blinded from one another for MPCA
 - Baselines established per manual chart audits
 - Wide variations of interpretations on how to conduct the chart audits
 - Calculations were inconsistent, data definitions and numerator/denominators were confusing to untrained personnel
 - Lack of trained personnel in audit protocol and statistics
 - Unyielding reporting system within the EHR



Mapping our data

- ✓ **2011: MPCA created the HCCN (Health Center Control Network)**
 - Data Repository developed Arcadia (later AZARA) to gather data across the Missouri FQHCs
 - Designed to facilitate consistent data points based on strict criteria from the various EHR s
 - Assisted with a more user-friendly reporting tool to extract data consistently across all MO FQHCs at any given time (after nightly “processing”) at the FQHC’s fingertips
 - Determining all the places the same information was recorded and where to pull (EHR vs PM) was time consuming. Mapping everything - ‘Obs’ terms versus codes and other same data representations was confusing for our RN who moved into IT to help create “user friendly” forms
 - We did not realize then how any of the connected systems, when updated or upgraded can break the mapping
 - Later, changes in customized forms required adding and/or remapping data elements
 - The HCCN prioritized quality benchmark goals, utilizing standardized references and their numerator/denominator definitions
 - ✓ HRSA, UDS
 - ✓ NQF and HP 2020
 - ✓ MPCA’s interim benchmarks
 - ✓ FQHC’s Individual Healthcare Plan
 - ✓ HEDIS not generally used until later years when the ACO comparisons were needed



ACCESS' tracking evolution

Diabetes	Quality Indicator (Benchmark)	Reporting Entity	How to Measure	251 patients	36 patients	32 patients	4 patients	41 patients	28 patients	13 patients	4 patients	159 patients	34 patients	19 patients	46 patients	21 patients	45 patients	*4 patients	4 patients
				AFC Total	Anderson Clinic %	J	L	Cassville Clinic %	A	D	W	Joplin Clinic %	B	H	P	R	R	Quark Ctr Clinic %	S
HbA1c < 7.0	> 40%	MPCA	age 18-75 DM I or II	50	33	34	25	50	54	46	25	47	53	63	35	57	42	75	75
HbA1c ≤ 9	> 77%	HC Plan		82	58	56	75	85	86	69	75	77	80	79	76	76	75	100	75
BP <130/80	> 25%	MPCA		24	14	3	67	15	26	0	0	25	25	13	24	50	16	100	67
LDL <100	> 36%	MPCA		43.2	50	46	50	46	44	44	100	42	46	44	34	57	36	33	33
Annual Dilated Eye Exam	> 60%	MPCA		14.7	8	6	25	20	18	39	0	11	15	11	13	24	11	75	25
Annual Comprehensive Foot Exam	> 80%	MPCA		96.8	94	94	100	100	100	100	100	96	97	100	100	86	98	100	100

2014	How to Measure	Quality Indicator (Benchmark)	State Average				AFC Average				Anderson Clinic				Cassville Clinic				Joplin Clinic				Joplin PEDS				Mt. Vernon Clinic				Neosho Clinic									
			State Total	State Total	State Total	State Total	AFC Total	AFC Total	AFC Total	AFC Total	Anderson Clinic %	Anderson Clinic %	Anderson Clinic %	Anderson Clinic %	Cassville Clinic %	Cassville Clinic %	Cassville Clinic %	Cassville Clinic %	Joplin Clinic %	Joplin Clinic %	Joplin Clinic %	Joplin Clinic %	PEDS Clinic %	PEDS Clinic %	PEDS Clinic %	PEDS Clinic %	Mt. Vernon Clinic %	Mt. Vernon Clinic %	Mt. Vernon Clinic %	Mt. Vernon Clinic %	Neosho Clinic %	Neosho Clinic %	Neosho Clinic %	Neosho Clinic %						
			1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr						
HbA1c < 7.0 (Controlled)	Lab result	> 40%					MPCA	47	48	49	47	45	41	47	47	45	43	40	43	43	44	48	50	49	47	44	88	n/a	65	100	100	60		58	61	64	49	51	49	42
Adult HbA1c >9.0	Lab results	≤16%								24	25	24			24	24	21			21	20	34			33	34				n/a	14		11	16	32		33	31		
BP <130/80		> 25%					MPCA	42	35	35	38	30	35	30	28	28	44	50	40	43	43	38	41	34	37	36	50	n/a	n/a	n/a	50	39		33	45	38	40	37	36	38
BP <140/90		>65%					MPCA		72	77	76	70		70	71	69	77		75	78	78	71		71	72	71			100	100	100	88		91	84	76		72	75	80
LDL <100	w/in 1yr	> 36%					MPCA	43	42	41	44	39	35	38	40	43	43	45	45	42	40	40	43	38	39	39	100	n/a	n/a	n/a	50	40		33	46	49	46	47	52	52
Annual Dilated Eye Exam	w/in yr	> 60%					MPCA	61	62	52	48	36	32	49	34	29	61	67	72	57	56	59	66	65	55	50	50	n/a	n/a	n/a	50	58		64	52	55	54	60	52	52



Data population management

- ✓ 2012 – 2013 – 2016 - Present: ACCESS transformed all clinics (4 at the time) into Patient Centered Medical Homes (PCMH)
 - 2012 ACCESS set out to become recognized as a PCMH by the National Committee for Quality Assurance (NCQA)
 - 2013 All 4 clinics received 95% or greater scores of achievement in meeting NCQA standards' highest level, Level 3
 - Part of this transformation included quality data reporting of key health outcome indicators as our measures of quality to Missouri Medicaid
 - 2016 4 out of the now 6 clinics were re-recognized Level 3, again with \geq 95% scores.
 - ACCESS continues this participation, which also affords ACCESS to employ RN Care Mangers and a dedicated Behavioral Health Consultant to assist in chronic disease management improvements
 - 2017: ACCESS' newest clinics are undergoing recognition attestation
- ✓ 2012 - Present: Meaningful Use (MU) endeavors for goal achievement = Incentive payment
 - As support staff were concentrating on PCMH standards and improving the health outcomes of our patients, IT was also pushing to meet software utilization
 - Stages were aggressive and often required customization, even though the EHR was MU "certified"

MO Medicaid quality tracking for participating FQHCs

The data comparisons are MPCA participating FQHCs in Health Home Initiative (HHI) – other participating health systems are not indicated

Measures	Hypertension Controlling High Blood Pressure (NQF 0018)	Child Weight Screening / BMI (NQF 0024)	Child Weight Screening / Nutritional Counseling (NQF 0024)	Child Weight Screening / Physical Activity (NQF 0024)	Care Coordination (MPCA PCHH)	SBIRT Drug Use (MPCA PCHH)	SBIRT Excessive Drinking (MPCA PCHH)	SBIRT Substance Abuse Screening and Follow Up (MPCA PCHH)	Adult LDL < 100	Use of Appropriate Medication for Asthma Ages 5-11 (NQF 0036 modified)	Use of Appropriate Medication for Asthma Ages 12-18 (NQF 0036 modified)	Use of Appropriate Medication for Asthma Ages 19-50 (NQF 0036 modified)	Use of Appropriate Medication for Asthma Ages 51-64 (NQF 0036 modified)	Diabetes A1c > 9 or Untested (NQF 0059)	Diabetes A1c < 8 (NQF 0059 modified)	Diabetes BP < 140/90 (NQF 0059 modified)	Diabetes LDL Management - LDL < 100 (NQF 0064)	Screening for Clinical Depression and Follow-Up Plan (NQF 0418)	BMI Screening and Follow-Up >= 65 Years (NQF 0421)	BMI Screening and Follow-Up 18 - 64 Years (NQF 0421)
Final Goal January 2017	75%	85%	85%	85%	80%	5%	15%	85%	70%	75%	75%	75%	75%	20%	70%	75%	45%	85%	85%	85%
May 2016 Montly Target Goal	63%	48%	53%	50%	65%	6%	19%	50%	40%	60%	60%	65%	71%	29%	62%	65%	33%	50%	67%	54%
Access Family Care	66%	91%	73%	66%	58%	3%	6%	75%	18%	100%	100%	78%	82%	27%	60%	72%	43%	68%	93%	86%
A	46%	95%	44%	39%	18%	7%	4%	56%	8%	99%	97%	95%	84%	38%	50%	52%	15%	57%	55%	45%
C	66%	91%	71%	60%	18%	16%	8%	1%	22%	93%	89%	96%	83%	29%	60%	76%	41%	51%	74%	63%
F	60%	98%	87%	93%	0%	1%	3%	21%	11%	0%	0%	0%	0%	38%	54%	66%	27%	44%	96%	95%
J	57%	91%	69%	63%	67%	9%	6%	19%	6%	100%	90%	93%	96%	35%	51%	62%	26%	74%	65%	52%
M	57%	98%	6%	1%	36%	9%	11%	10%	14%	75%	80%	83%	92%	42%	50%	65%	34%	21%	61%	30%
Mo	51%	90%	25%	19%	47%	4%	11%	13%	8%	100%	100%	80%	100%	40%	50%	57%	32%	64%	67%	49%
My	46%	86%	66%	70%	52%	17%	15%	17%	12%	91%	91%	88%	84%	45%	46%	49%	31%	28%	56%	40%
N	63%	97%	52%	56%	81%	6%	11%	7%	16%	72%	77%	63%	81%	36%	53%	67%	39%	42%	75%	64%
S	60%	97%	26%	58%	86%	2%	4%	24%	22%	75%	75%	75%	100%	22%	63%	64%	51%	47%	90%	81%



ACPI:
ACCESS Comprehensive PCMH Integration

Project Objectives: (2015 - 2017)

- Diabetic patients will have a HbA1c<9, indicating good control
- ER/Hospitalizations timely follow-up with patients
- Diabetics' annual Eye Exams to prevent or early detection of blindness
- Integration of all ACCESS patients for Oral Health Care at ACCESS sites
- Community Resource Coordinator (CRC) & Health Information Management (HIM) development to centralize & standardize processes
- Internal staff education related to the ACPI project



Diabetes Health outcome HbA1c

Grant Cycle 1st 12 months

<p>Objective: decrease HbA1c>9 and untested ≤ 18% (MPCA) ≤ 16% (HP2020)</p>		<p>BASELINE RCHN Grant initiation 2015: 42% After fixing mapping & reran: 38%</p>	
<p>HHI = MO Mcd Health Home Initiative pop. Of diabetics</p>	<p>AO = All Other patients in Joplin</p>		
<p>HHI Joplin</p>	<p>AO Joplin</p>	<p>HHI across ACCESS</p>	<p>AO across ACCESS</p>
<p>22% (PCMH C-SPA HHI enrolled pts = Joplin only)</p>	<p>32% (PCMH C-SPA all pts minus HHI enrolled pts = Joplin, only)</p>	<p>21% (PCMH C-SPA HHI enrolled pts = all locations)</p>	<p>29% (PCMH C-SPA all pts minus HHI enrolled pts = all locations)</p>
<p>Objective: increase eye exams ≤ 18% (MPCA) ≤ 16% (HP2020)</p>		<p>BASELINE RCHN Grant initiation 2015: 42% After fixing mapping & reran: 38%</p>	



Diabetic patients HbA1c<9, indicating good control

- Diabetic patients will have a HbA1c<9, indicating good control
- Goal: Decrease HbA1c >9 and untested ≤18% (MPCA) or ≤16% (HP2020)
- By the end of the first project year, ACCESS made positive health outcome improvements in the high risk population of diabetic patients.
- The Medicaid Health Home Initiative (HHI) subpopulation ended with the lowest percent of patients with HbA1c>9 at 21%
- All other (AO) patients showed the most improvement, moving from HbA1c>9 baseline of 38% down to 26.7%.
- Since Missouri Primary Care Association (MPCA) interim goal is 18% and HP2020 is 16%, ACCESS continued their pursuit of reaching the 16% goal.

Multi-front approach accomplished improvements

- Evidence-based guidelines
- Standing orders
- Tracking: Hospital Utilization (IP & ER), Referrals for Diagnostics & Specialists
- Morning Huddle preparation
- Greater utilization of team-based care
- Partnership with area hospitals to enroll diabetic patient
- Continuous staff education
- Monthly QI/QA includes all clinic managers and other departments involved in Board Approved Improvement Plan (Clinical measures, Financial targets, HR goals, Patient Satisfaction)
- Patients assigned to Care manager and care teams
- Improve Transitions of Care timeliness and communications while decreasing hospital utilizations for primary care needs
- Increase Integrative services (Dental, Pharmacy, Vision,)

