Using Data to Manage Population Health Under Risk-Based Contracts
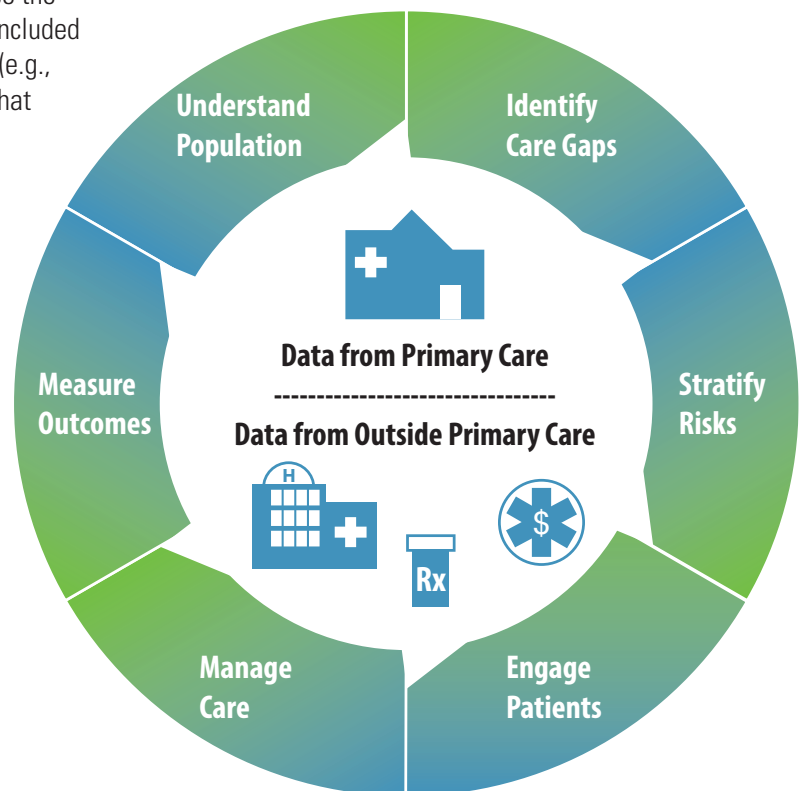
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Population health has been defined as "the health outcomes of a group of individuals, including the distribution of such outcomes within the group."[1] With value-based care, providers are increasingly being asked to take on more accountability, and in some cases financial risk, for cost and quality outcomes for a defined population. By reviewing this document, health centers can assess whether they are investing sufficiently in the clinical and administrative infrastructure and analytics to succeed under risk-based payment.

At a high level, health centers should start by asking: what are the ultimate goals of my risk-based contract? Is it to reduce the cost of care for assigned members? If so, what costs are included and which ones are not? Is it to meet certain benchmarks (e.g., a national 90th percentile) on a set of defined metrics? What is our baseline for key metrics of interest? How far do we need to go to be financially successful?

Distilling a risk-based contract into a few "big goals" can help guide and engage leaders, providers, and staff in the necessary work to perform under the contract.

This brief will walk health centers through three key questions related to using data to succeed under risk-based contracts:

1 **What data do I need and how do I get it?**

2 **How should I analyze the data?**

3 **How should I use data analysis to manage quality and cost?**

Goal: To help health centers understand the data-related capacities needed to participate successfully in risk-bearing payment models.

Data from Primary Care

Data from Outside Primary Care

Understand Population · Identify Care Gaps · Stratify Risks · Engage Patients · Manage Care · Measure Outcomes

What is meant by "risk-based contracts"?

Risk-based contracts base payment to providers on cost and quality of care for a defined population for whom a provider has responsibility. A common feature of risk-based payment today is that primary care providers are assuming accountability for cost and quality beyond the realm of primary care based on the following assumptions: 1) primary care has some capacity to prevent utilization of hospital, pharmacy, and specialty care services; and reduce duplication of high-cost imaging and lab services; 2) primary care should have a financial incentive to keep populations healthy and out of the hospital.

Upside risk and downside risk are the two broad categories of financial risk associated with risk-based contracts. Upside risk refers to the potential for a provider to get paid more depending on the degree to which outcomes are achieved without risking losing money if outcomes are not achieved. A common example of this is a shared savings arrangement defined by a payer. Downside risk refers to the potential for a provider to get paid less or have additional expenses depending on cost and quality performance for a defined population. Examples include shared risk arrangements and capitation.

In a **capitation** model, a provider agrees ahead of time to a fixed amount for providing, or arranging and paying for, a set of services for a defined population--even if the cost of delivering those services exceeds the amount paid (the capitation rate). For example, under primary care capitation, a provider agrees to provide all necessary primary care services to a population and is paid a predetermined, fixed amount per member per month (PMPM) whether a member has zero or ten visits.[2]
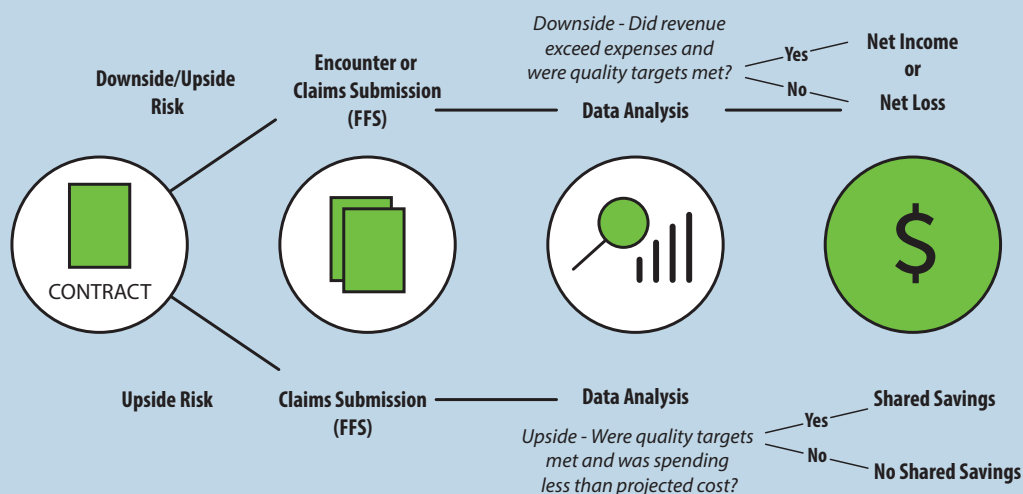
Some health centers have pursued risk outside of primary care capitation by being part of entities that accept capitation for all professional services or even total cost of care (e.g., a globally capitated ACO). For instance, in some states, health centers are participating in independent practice associations (IPAs) that accept full professional risk, meaning the IPA is paid a monthly rate by a health plan for specialty and primary care services for a defined population, not including hospital technical fees. If the IPA's expenses exceed the payments they receive, they must absorb the losses (downside risk). Conversely, if expenses are less than payments received, the difference can be distributed to the providers in the IPA. Often these gains take the form of performance payments; they can also be kept as reserves to stabilize the IPA in the event of future losses.

ACO contracts can provide upside and upside/downside risk, depending on the contract with the payer. Payers are often willing to negotiate larger upside potential for providers in exchange for providers accepting downside risk.

Performance payments, shared savings, or shared losses under an IPA or ACO contract are not included in a health center's annual reconciliation.

Regardless of upside or downside risk, the common feature of risk-based contracts is that they provide health centers a financial incentive to improve population health in terms of both cost and quality of care.

Figure A: How Data Influences Payment in Risk-based Contracts

1 | What data do I need and how do I get it?

1. Membership assignment or attribution data
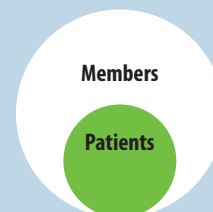
What population am I responsible for?
Membership or attribution data will answer this question for you.

- Request that payers provide attribution/assignment lists. Ask for lists in electronic format, not just as PDFs. This allows you to manipulate the data, such as matching the data against your EHR data.

- Ask for any demographic information the payer may have, such as updated contact information, housing status, health risks, and risk scores. Many health plans do member outreach and may have better contact information than state eligibility lists. However, payers' contact information for Medicaid members may not be accurate.

- Consider how your health IT system can capture and store data about members who have never received services from you. A quarter to a third of individuals in managed care are never seen in primary care. Does your EHR have a "place" for storing data for members who have never visited your health center? Many EHR systems are able to load eligibility files and create patient accounts without creating a full blown medical record, but it may require working with the vendor to enable this capability. The next step is to make sure these "assigned but never seen" individuals are also included in your population health management system.

2. Utilization and cost data

How is my population using health services inside and outside of primary care?
In order to best manage toward quality and total cost of care outcomes, it is essential to know what services are being used—inside of and outside of primary care. Primary care only accounts for 2-12% of the total cost of care.[4,5] To be successful in risk-based contracts, health centers need to consider how they can reduce avoidable utilization in hospital and specialty care, and shift referral patterns toward low-cost, high-quality (high-value) care. Health centers can use various types of utilization and cost data to improve cost and quality outcomes.

Assignment vs. Attribution

Assignment and attribution models are designed to give clear accountability to a provider for a defined population.

Assignment: Approximately 80% of Medicaid is delivered through managed care.[3] Under many managed care contracts, beneficiaries either select or are automatically assigned to a primary care provider. In either case, the goal under risk-based contracts is to align clinical empanelment with membership assignment. For many health centers entering risk-based contracts in managed care, caring for a larger member population than their current patients is a fundamental shift.

Members

Patients

Attribution: Under many ACO contracts, a payer attributes patients to a provider based on claims history and/or an individual's most frequent or recent provider visits. It is important to understand the methodology your payer uses to attribute patients for the purposes of calculating cost and quality outcomes.

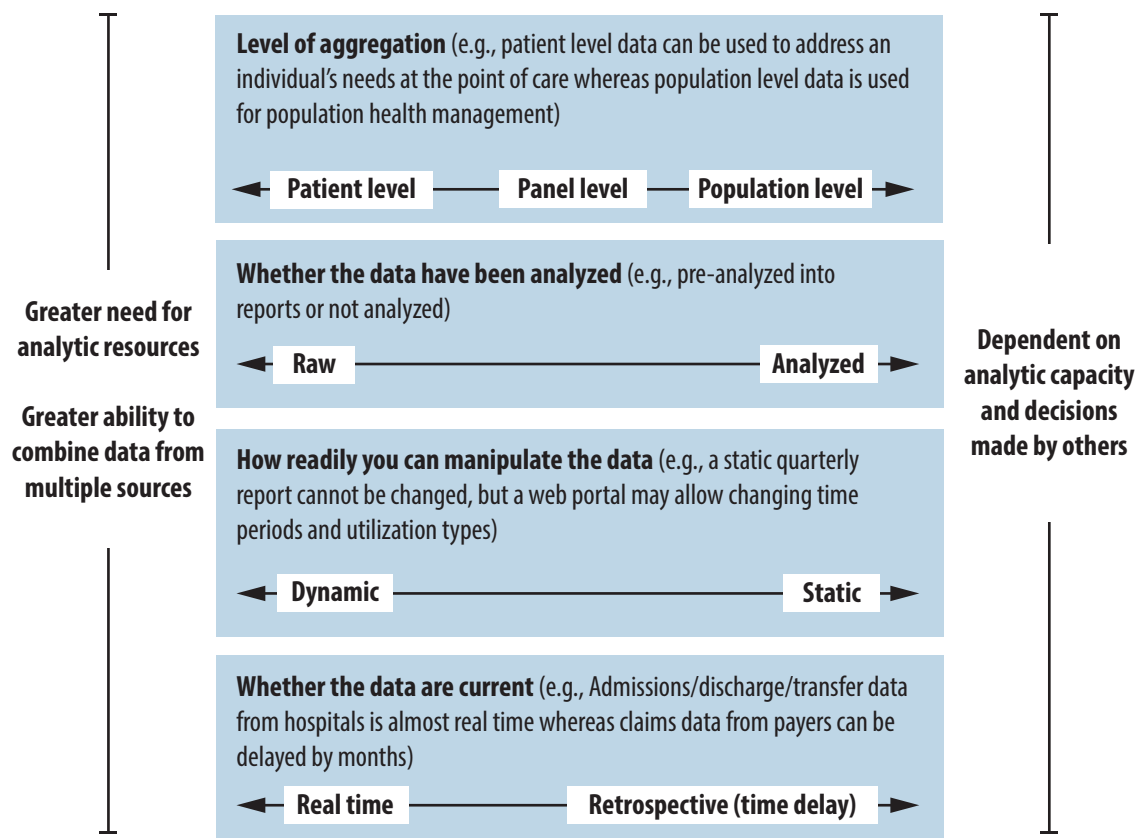| Data from Inside of Primary Care	Data from Outside of Primary Care
• Primary care utilization	• Specialty utilization and referrals
• Ancillary (labs, tests)	• Hospital utilization
• Internal pharmacy	• ED utilization
• Dental	• Inpatient mental health utilization
• Mental health diagnosis	• Long Term Care utilization
• Substance use diagnosis	• Substance use treatment utilization
• Individual social determinants of health (SDH) data (e.g., food security, housing, employment, etc.)	• Neighborhood SDH data
	• Pharmacy claims data
	• Criminal justice data

Utilization data can vary in terms of how you receive it. Figure B depicts four dimensions in which utilization data can vary. The amount of analysis required depends on the form in which a health center receives data. For instance, raw data can offer the most flexibility in terms of combining data across payers and answering specific questions; however, it also can require a sophisticated analyst, and sometimes a programmer, to manipulate the data into formats that can be acted upon.

Effectively using data under risk-based contracts usually requires health centers to have some in-house analytic capacity.

3. Using utilization as a proxy for cost data

Total cost of care depends largely on the utilization of specialty and hospital services, the service intensity of the service mix, and the prices of those services. Even if a health center holds some risk related to total cost of care, total cost of care can be difficult to attain and can have long time lags to calculate due to claims processing and analysis. Additionally, payers are often hesitant to share confidential unit prices of utilization. Futhermore, primary care does not negotiate unit prices with other providers, making primary care's influence over total cost of care largely tied to influencing the utilization of services in the broader health system. Utilization of inpatient, imaging and emergency services offers a decent proxy for how primary care is influencing total cost of care since specialty physician and hospital technical costs tend to represent well over half of all health spending.

Figure B: Dimensions of Data Used for Managing Risk in a Population

Level of aggregation (e.g., patient level data can be used to address an individual's needs at the point of care whereas population level data is used for population health management)

← **Patient level** — **Panel level** — **Population level** →

Whether the data have been analyzed (e.g., pre-analyzed into reports or not analyzed)

← **Raw** — **Analyzed** →

How readily you can manipulate the data (e.g., a static quarterly report cannot be changed, but a web portal may allow changing time periods and utilization types)

← **Dynamic** — **Static** →

Whether the data are current (e.g., Admissions/discharge/transfer data from hospitals is almost real time whereas claims data from payers can be delayed by months)

← **Real time** — **Retrospective (time delay)** →

Greater need for analytic resources

Greater ability to combine data from multiple sources

Dependent on analytic capacity and decisions made by others

Patient-level data is often used for real-time clinical management. It tends to be…	*Population-level data is often analyzed to identify opportunities for improved care delivery. It tends to be...*
• Timely	• Retrospective
• Actionable in raw form for flagging the need for transition planning, patient follow-up and care management intervention. Some data is available in the EHR while some will often come from hospital partners. Many health centers will depend on payer reports and can also benefit from analytic expertise.	• Actionable in analyzed form for doing population health management such as outreach to subgroups with specific needs. Some population data is available from EHR or population health management system reports. Many health centers will depend heavily on payer reports.
• **Example:** Admission/discharge/transfer (ADT) data to manage follow up in primary care after hospitalization	• **Example:** Lists of high-risk individuals identified for a care management intervention

Frequency and format

Here are three tips for getting readily usable data—both in terms of format and frequency:

- **Request frequent reports from payers.** Under many risk-based contracts, the payer ultimately calculates the outcomes and the payments for a provider, ACO or IPA at the year's end. Managing toward these outcomes—both in terms of data quality improvement and practice change—requires much more frequent updates. It is essential to request interim analysis on the outcomes of interest as frequently as possible (monthly or at least quarterly) and to validate that any internal analyses you are doing align with their calculations.

- **Start with pre-analyzed reports.** EHRs and population management systems often produce "canned" reports such as disease registries or Gaps-in-Care Reports. Other sources of pre-analyzed reports might include: health plans, IPAs, health information exchanges (HIE), and all-payer claims databases (APCD). These sources may produce lists of high-risk individuals (e.g, with a behavioral health co-morbidity or history of high hospital use), or lists of high-value specialist providers (e.g., perform high numbers of procedures, have good outcomes and low costs relative to other providers).

- **Identify data that is useful without further analysis.** Some payers will generate high-risk lists for outreach and care management. Admission, Discharge and Transfer (ADT) data is a strong example of raw, real-time data, often available from local hospitals, that is useful without much further analysis. ADT data includes all payers' data, so for health centers with members with different health plans, it can be an efficient way of accessing inpatient data that is highly correlated with total cost. For example, some health centers will use an ADT list as a trigger for joint discharge planning or to target patients with a first-time prescription for opioid pain medication with education about avoiding addiction. Performing simple tallies of ADT data across local hospitals might inform placement of an ED coordinator to reconnect patients to primary care.

2   How should I analyze the data?

For providers in risk-based contracts, data analysis should ultimately help providers to understand and minimize unwarranted variation and maximize performance on cost and quality metrics for which the provider is responsible and/or being measured against. These analyses can be successful beginning with health center data. Combining your health center's data set with other data sets can strengthen your analyses and help you create a more robust picture of risk in the population you serve. For example, your health center's EHR may have data on medication adherence (such as whether or not a refill was picked up) for asthmatic patients that could be reviewed in combination with ED utilization rates for asthma exacerbation.

To understand the relationships between care and resource use inside and outside of primary care, health centers will either need to depend on data combined by others (e.g., health plans, managed care organizations, health information exchanges) or will need to build their own relational databases for analyses. Combining social determinants of health data with claims and EHR data can further reveal opportunities for care intervention and system and/or policy change. Using systematically collected social determinants of health (SDH) data is still in its early stages, but there are emerging examples of SDH data being used to refine service mix and care approaches. SDH data can also set the stage for payment reform that takes SDH into account.[6]

Ultimately, the goal of data analyses is to provide care teams the necessary information to improve quality and influence drivers of the total cost of care. Following are some examples on how to analyze data to do this:

1. **Understand and improve data quality and completeness.** For many health centers starting in risk-based contracts, the first forays into data analysis focus on improving the underlying quality of the data that will be used to create specific reports. For instance, when you look at utilization data, how much is missing or blank? Under a risk-based contract, if you don't capture it accurately, you can't count it accurately. What percent of data couldn't be used because the values were not within the standard range/format? Are data stored in your EHR in a way that you can report on them without doing chart review? For instance, if your contract pays for meeting a 90th percentile goal for breast cancer screening, how mammographies are captured in the EHR becomes essential. If you only have a scanned report, how can that be translated into a coded piece of data such that you can easily report on it? For in-house labs, are the results stored in the same location as your interfaced lab feed? If data is coming in from outside

sources, it is essential to know what each field means and work with external entities to ensure data completeness. Getting to know your data and improving the underlying completeness and accuracy with the big goals of the contract in mind can mean involving care teams in iterative data quality improvement efforts.

2. **Create Gaps-in-Care Reports to focus on individual patients within your population.** Focusing on specific groups can help you understand where to invest your resources to "move the needle" in gaps in quality performance. Gaps-in-Care Reports should minimally include all measures for which the health center has financial accountability. In a managed care contract for which you have a population assigned to you, you should include data not just for your patients but also for your assigned members. For example, a health center may be used to working to improve UDS outcomes, but a health plan may care much more about the Healthcare Effectiveness Data and Information Set (HEDIS) measures, a national standard set of measures that State Medicaid programs use to judge and hold plans accountable. Most health plan incentive programs involve measuring performance on a range of HEDIS measures. While the health conditions of interest are often the same, the methodologies used to calculate UDS and HEDIS measures are different. In UDS, the population in the denominator only includes patients a health center has seen. In HEDIS, however, the denominator is assigned members, regardless of whether they have been seen.

3. **Create population health management reports to manage the health of discrete subgroups.** Population health management reports use patient-level data that can be stratified in different ways. Practice profile reports can look at run charts of quality outcomes over time. For example, data can be analyzed:

   - **By panel:** e.g., all assigned members who may need a primary care checkup or screening

   - **By subpopulation:** e.g., individuals with a behavioral health diagnosis and one or more chronic conditions

   - **By member population:** e.g., outcomes stratified by demographics such as language, race, or insurance status as a way to identify and act upon health disparities between groups; total number of individuals who need a service (such as a screening) in order to meet a key target set by a value-based contract

4. **Identify high-risk patient populations to prevent unnecessary or avoidable hospitalization and specialty care.** Research has long shown that approximately 5% of individuals incur 50% of all healthcare costs. Thus, identifying high-risk individuals, i.e., those who are likely to suffer poor health outcomes and have high utilization in the future and whose utilization patterns can be reduced through intervention, is one way to improve outcomes and reduce overall costs. What is challenging is identifying those patients with "rising risk" with whom the health center may have a positive impact. A number of analytic contractors have tried to design algorithms for payers and providers that use claims data, and sometimes clinical and even SDH data, to predict which people are statistically likely to have future high costs and poor outcomes based on prior utilization, diagnoses, and even neighborhood-level factors before they become high utilizers. Health plans can be a strong partner to health centers in this work as they most often have done analyses to identify high-risk patients.

5. **Identify cost drivers for total cost of care.** Health centers should make every effort to gain access to cost data from health plans. Health centers should look at cost data in two ways: point in time and change over time. In both cases, it is helpful to examine the distribution of per-member-per-month costs across an array of factors to determine their relative impacts on total cost of care. Factors include:

   - Payers and eligibility categories
   - Major referral providers
   - Service type (e.g., lab, specialty, pharmacy)
   - Site of care (e.g., outpatient, inpatient)
   - Population health risk (e.g., diagnostic cost groups using clinical risk grouping software)
   - Unit price and service volume

6. **Conduct variation analysis on price, utilization and service intensity to identify opportunities for improvement.** Within your own health center, reviewing how outcomes vary for different providers can reveal opportunities to reduce variation in ways that improve performance under risk-based contracts. Variation analysis can reveal opportunities to improve on metrics for which you might be paid for performance, and identify high-performing providers who can share best practices and protocols. Common variation in practice analyses might look at rates of prevention screening, referrals, or imaging services among providers. Variation analyses can also extend to reviewing variation in prices for specialty services and other referral-related costs. For example, health centers can work with payers to identify low-cost, high-quality specialty providers and then measure the referral rates to such specialists across their primary care providers with the goal of increasing referral rates to such "high value" providers.

3 How should I use the data to manage quality and cost?

The following tips may help health centers in adopting the data-driven culture necessary to succeed in risk-based contracts:

- **Make data a part of every meeting.** Whether it is an executive team, clinician, finance, or all-staff meeting, having leaders, clinicians and staff use data reports together to guide discussions and decisions can help translate value-based payment into value-based care. Indeed risk-bearing provider groups report that sharing cost and utilization data alongside quality data with clinical staff can be very helpful for identifying and acting on opportunities for quality improvement and improved financial performance.

- **Set quantitative organizational performance goals for value.** In the same ways that health centers have long managed toward quality goals, health centers can leverage this capacity to manage toward value goals involving utilization and cost metrics.

- **Create organizational accountability throughout the health center for improvement on these goals**. This could include compensation models for providers, recognition for performance improvement, or frequent reporting on how teams are doing at management team meetings.

- **Prioritize high-cost patients with high probability for impact under contracts with financial risk for total cost of care.** A small portion of any population generates the majority of the healthcare costs. Working with a payer or using predictive analytic software can help to identify high-risk patients. For example, care transition lists of individuals who have recently utilized emergency and inpatient services can be generated to ensure such patients are connected with and receiving primary care. Focusing on high probability for impact avoids spending valuable care management, outreach or clinical resources where they are unlikely to make a difference. Work with your clinical team to define "high probability for impact" based on resources that you have in your health center and in your community.

- **Focus on metrics for which you are financially accountable.** It can be overwhelming to take on too many metrics at once. Focusing on a few key areas is a way to concentrate improvement efforts where there will be financial return while also using clinician and analytic bandwidth judiciously.

- **Use data to evaluate the impact of specific strategies, programs, or interventions designed to improve quality and cost outcomes**. Beyond using data to improve on discrete outcomes for which a health center is financially accountable, data can also be used to improve overall processes and programs. For instance, the same data being collected for a Gaps in Care Report (e.g., inpatient admissions, blood pressure control) might be used to rigorously study a new care management program. Using data to understand what interventions are working well can help health centers use programmatic resources to perform even better under risk-based contracts. This may require comparing the investment a health center has to make to sustain a program against the financial return it generates under the risk-based contract.

Table 1 summarizes different types of data, sources, and how to use the data depending on if it is retrospective (with a time lag) or real time. Table 1 also functions as a checklist to identify any unrealized opportunities to use data for succeeding under risk-based contracts.

Table 1: Self-Assessment: Using Data to Manage Risk

Data category	Retrospective source	How to use if retrospective	Using this data?	Real time source	How to use if real time	Using this data?
Data from inside primary care						
Primary care utilization	EHR Pop Health Mgt System	Gaps in care	❏	EHR	EHR alerts for preventive care	❏
Mental health utilization	EHR	Gaps in care Identify high risk		EHR	Warm handoff, coordinated care	
Substance use utilization	EHR	Gaps in care Identify high risk	❏	EHR	Warm handoff, coordinated care	❏
Ancillary (labs, tests)	EHR	Gaps in care, Identify value opportunities (insourcing, negotiating)	❏	EHR	EHR alerts for preventive care	❏
Pharmacy	EHR or Claims - fast processing (but may be a different payer)	Gaps in care Identify opportunity for generics use	❏	EHR	Medication reconciliation, alert for high-cost drugs	❏
Dental	EHR	Gaps in care	❏	EHR	Referral, appointment if in-house dental	❏
Social determinants of health (SDH) data	EHR or screening data Pop Health Mgt System	Identify at-risk	❏	EHR or screening data	Referral SDH, intervention if available	❏
Data from outside primary care						
Mental health utilization (outpat)	Claims (may be BHO, not HP)	Identify high risk	❏	BH provider note to PCP	Coordinated care	❏
Specialty utilization	Claims	Gaps in care Identify high risk	❏	Specialist note to PCP	Coordinated care	❏
Specialty consultation	eConsult	Gaps in care	❏	eConsult response	Coordinated care	❏
Hospital utilization	Claims, HIE, ADT data	Identify high risk	❏	Patient level hospital, ADT alerts	Schedule follow up and reminders in place for after discharge	❏
Emergency department utilization	Claims Health information exchange (HIE), ADT data	Identify high risk	❏	Patient level hospital, ADT alerts	Alert care management team, schedule follow up and reminders in place for after discharge	❏
Inpatient mental health utilization	Claims (may be a different payer than health plan), HIE	Identify high risk	❏	Patient level hospital, ADT alerts	Schedule follow up and reminders in place for after discharge	❏
Long-term care utilization	Claims (but may be a different payer), HIE	Identify high risk	❏	Alert when assigned patient transferred to post-acute care	Schedule follow up and reminders in place for after discharge	❏
Substance-use care	Claims (may be a different payer), HIE	Identify high risk	❏	Patient level hospital ADT alerts, alert from police	Coordinated care	❏
Community-level SDH data	Public health department data, community partners, neighborhood organizations	Risk adjust quality and cost outcomes	❏	Identify at-risk populations	Coordinated care	❏

1. Kindig, DA, Stoddart G. (2003). What is population health? American Journal of Public Health, 93, 366-369.

2. Note that while many CHCs are paid primary care capitation by a payer, annual reconciliation ensures that CHCs receive revenue equal to their prospective payment system (PPS) rate multiplied by the volume of visits with billable providers, thus removing CHCs from the financial risk of primary care capitation. Thus, the more relevant forms of capitated risk for CHCs are those associated with participating in IPA or ACO contracts.

3. https://www.medicaid.gov/medicaid-chip-program-information/by-topics/data-and-systems/medicaid-managed-care/downloads/2014-medicaid-managed-care-enrollment-report.pdf

4. http://www.commonwealthfund.org/~/media/files/publications/issue-brief/2012/mar/1585_reschovsky_paying_more_for_primary_care_finalv2.pdf

5. http://www.cpca.org/cpca/assets/File/Announcements/2013-01-29-ValueofCHCStudy.pdf

6. Gottleib L, Tobey R, Cantor J, Hessler D, Adler N, Integrating Social And Medical Data To Improve Population Health: Opportunities And Barriers, Health Affairs, November 2016 vol. 35no. 11 2116-2123