Population Health Software Capabilities

This tool can help organizations understand the key capabilities of population health software, which can inform the software selection process.

# How to Use this Tool

* Review the table of population health software capabilities, beginning on the next page.
* Inventory which capabilities you currently have in place.
* Consider whether your organization would use each of the capabilities, including how soon it would be ready to adopt them. Ask yourselves: How would we use this capability in our organization? If we spend money to get this capability, will we be able to take full advantage of it? When will we be ready to use the capability?
* Review the example below, then complete the table starting on the next page. Indicate how important each population health capability is to your organization by assigning a priority rating (A, B, C). Put the letter in the year your organization would want to adopt that capability. Some capabilities may be important to have in the near term, but only if your organization will have the capacity to successfully use those capabilities. You may decide to roll out additional capabilities only after others are mastered within your organization.

Example of rating for risk stratification capabilities:

| Capability | Year to Adopt Capability and Priority Rating (A,B,C) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| In place now | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Out of scope |
| 3. Risk Stratification |  |  |  |  |  |  |  |
| 1. Stratify clinical risk level (i.e., at risk, high risk, very high risk) (includes comorbidities) |  | A | **EXAMPLE** |  |  |  |  |
| 1. Identify highest impact patients (combines clinical risk, utilization, cost) |  | B |  |  |  |  |  |
| 1. Identify patients who are at compliance risk by ability to flag potential barriers to adhere to clinical protocols |  |  |  | A |  |  |  |

**Population Health Software Capabilities**

| Capability | Year to Adopt Capability and Priority Rating (A,B,C) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| In place now | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Out of scope |
| 1. Patient Subpopulations – registries of who fits criteria |  |  |  |  |  |  |  |
| 1. Access to directory services that provide person/patient identification (PID) and record locator services |  |  |  |  |  |  |  |
| 1. Aggregate internal clinical data (from EHRs, virtual visits, pharmacy systems, labs)  * Condition/diagnosis * Comorbidities * Conditions requiring follow-up * Problem list * Clinical impression * Lab results * Diagnostic imaging results * Functional status measures * Medications * Procedures * Treatment adherence * Clinical observations (e.g., vital signs) * Specific goals (short, medium, long term) * Gender, race, ethnicity, language * Unstructured notes via natural language processing (NLP) |  |  |  |  |  |  |  |
| 1. Aggregate internal administrative and financial data (from billing systems, claims, payers)  * Billing data (e.g., diagnoses from ICD-9 codes, dates of service, utilization/office visits, procedures performed from CPT codes, medication data from NDC codes, cost data) |  |  |  |  |  |  |  |
| 1. Create queries to identify subpopulations (save, re-run, share, produce reports) |  |  |  |  |  |  |  |
| 1. Identify patient populations based on clinical conditions and health behaviors (e.g., smoking status) |  |  |  |  |  |  |  |
| 1. Segment patient populations by provider, intervention, or service type |  |  |  |  |  |  |  |
| 2. Integrate External Data |  |  |  |  |  |  |  |
| 1. Acquire external data (e.g., HIEs, tele-monitoring from devices such as Bluetooth thermometers, BP monitors and scales that feed data to a patient portal or EMR) (see also 7.h.) |  |  |  |  |  |  |  |
| 1. Integrate external data from payers and others (e.g., claims data from Medicare, Medicaid, commercial payers) |  |  |  |  |  |  |  |
| 1. Maintain audit logs and usage reports, as security measure |  |  |  |  |  |  |  |
| 3. Risk Stratification |  |  |  |  |  |  |  |
| 1. Stratify clinical risk level (i.e., at risk, high risk, very high risk) (includes comorbidities) |  |  |  |  |  |  |  |
| 1. Identify highest impact patients (combines clinical risk, utilization, cost) |  |  |  |  |  |  |  |
| 1. Identify patients who are at compliance risk by ability to flag potential barriers to adhere to clinical protocols, such as:  * Language barriers * Cognitive inability * Physical inability * Economic inability * Insurance status * Willing and informed refusal to participate in care protocol (e.g., religious reasons) * Medication contraindications to participate in a care protocol * Geographic barrier * Stress index (i.e., life events, recently deceased spouse) * Mortality * [Medicare risk adjustment information](https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Risk-Adjustors.html) |  |  |  |  |  |  |  |
| 4. Risk Predictive Analytics |  |  |  |  |  |  |  |
| 1. Calculate future risk based on health status and social determinant factors (i.e., readmission management, organization trend data incorporated into prediction) |  |  |  |  |  |  |  |
| 1. Predict utilization and cost  * Inpatient visit * Inpatient length of stay * ED visits * Medications * Readmission |  |  |  |  |  |  |  |
| 5. Patient-Provider Attribution |  |  |  |  |  |  |  |
| 1. Record patient-selected physician during open enrollment |  |  |  |  |  |  |  |
| 1. Identify most frequently visited physician over past two years |  |  |  |  |  |  |  |
| 1. Record assigned primary care physicians (same geographic area, employer group to primary care physicians in PPO or HMO) |  |  |  |  |  |  |  |
| 6. Performance Management |  |  |  |  |  |  |  |
| 1. Access a library of common performance metrics (i.e., HEDIS; STAR; Medicare Quality Payment Program; Meaningful Use; NQF measures; ACO measures; state-specific, such as MN Community Measurement) |  |  |  |  |  |  |  |
| 1. Produce monitoring reports  * Quality performance (e.g., use of evidence-based guidelines and protocols and progress toward their use, achievement toward common performance metrics) * Regulatory reporting * Others, such as productivity, outcomes, cost savings, disease status, utilization, claims, quality measures, authorizations |  |  |  |  |  |  |  |
| 1. Generate dashboards showing quality performance (by facility, region, or practitioner, or other desired metrics) |  |  |  |  |  |  |  |
| 1. Generate dashboards showing cost of care for individual patients and populations (by facility, region, or practitioner, or other desired metrics) |  |  |  |  |  |  |  |
| 1. Provide drill-down capability in dashboards (from population to individuals, to utilization and financial analytics |  |  |  |  |  |  |  |
| 7. Educate and Engage Patients |  |  |  |  |  |  |  |
| 1. Integrate with a personal health record (PHR) / patient portals (secure messaging, patient scheduling, refill requests, patient education and health maintenance reminders) |  |  |  |  |  |  |  |
| 1. Access and track use of customizable educational material, available at point of care |  |  |  |  |  |  |  |
| 1. Document patient-preferred method of contact (i.e., email, text messaging, secure messaging via patient portal, phone call) |  |  |  |  |  |  |  |
| 1. Facilitate reminders and campaigns that target populations with gaps in quality measures |  |  |  |  |  |  |  |
| 1. Support non-English language notifications |  |  |  |  |  |  |  |
| 1. Offer client-specific report cards and diaries |  |  |  |  |  |  |  |
| 1. Use templates to build a patient’s self-management plan of care (supports motivational interviewing, and shared decision making) |  |  |  |  |  |  |  |
| 1. Maintain patient-supplied information (i.e., logs/journals, preferences, biometrics from cloud-based mobile health applications) |  |  |  |  |  |  |  |
| 8. Care Team Coordination |  |  |  |  |  |  |  |
| 1. Document care team members, including patient’s caregiver/ family support team members |  |  |  |  |  |  |  |
| 1. Document social and community supports, including caregiver/family support team members |  |  |  |  |  |  |  |
| 1. Produce and maintain care plan (auto-generated from evidence-based assessment, personalized, dynamic) |  |  |  |  |  |  |  |
| 1. Access patient dashboards to monitor goals and outcomes |  |  |  |  |  |  |  |
| 1. Integrate with EHR for shared access to longitudinal record (e.g., view risk scores, care gaps, plan of care) |  |  |  |  |  |  |  |
| 1. Send secure, HIPAA-compliant messages to both internal and external recipients |  |  |  |  |  |  |  |
| 1. Export patient data (e.g., spreadsheets, CSV, XML) to share with external partners |  |  |  |  |  |  |  |
| 1. Manage referrals (i.e., referral to care manager for assessment) |  |  |  |  |  |  |  |
| 1. Generate event-driven workflow (known as Admit, Discharge, Transfer (ADT) events), such as:  * Patient status updates for admissions and discharges, Bluetooth device alerts * Readmissions management (hospital admission, risk of readmission, updates with status changes, discharge planning) |  |  |  |  |  |  |  |
| 1. Generate diagnosis-based workflow, such as for patients with diabetes |  |  |  |  |  |  |  |
| 1. Generate role-based workflows |  |  |  |  |  |  |  |
| 1. Generate care manager dashboard – prioritize tasks |  |  |  |  |  |  |  |
| 1. Generate care management analytics – monitor program and tasks |  |  |  |  |  |  |  |

### References

* [A Health IT Framework for Accountable Care](https://www.healthit.gov/FACAS/sites/faca/files/a_health_it_framework_for_accountable_care_0.pdf), Certification Commission for Health IT (CCHIT), March 2013.
* [Population Health Management Software: An Opportunity to Advance Primary Care and Public Health Integration](http://phii.org/PHM), Public Health Informatics Institute (PHII), June 2016.
* [Stratis Health Health IT Toolkits](http://www.stratishealth.org/expertise/healthit/index.html)
* Vendor websites: [Caradigm](http://www.caradigm.com/en-us/), [eQHealth Solutions](http://www.eqhs.org/Solutions/eQSuite/Population-Health-Management-Care-Coordination), [HealthCatalyst,](https://www.healthcatalyst.com/population-health/) [Impact Advisors](http://www.impact-advisors.com/population-health/population-health-management-vendor-selection/), [LexisNexis](http://www.lexisnexis.com/risk/products/health-care/population-health-monitor.aspx), [McKesson](http://www.mckesson.com/population-health-management/population-health-management/), and [Zeomega](http://www.zeomega.com/what-we-do/population-health-management-technology-platform/)

For more information about the Rural Health Value project, contact:

University of Iowa | College of Public Health | Department of Health Management and Policy

[www.RuralHealthValue.org](http://www.RuralHealthValue.org) | [cph-rupri-inquiries@uiowa.edu](mailto:cph-rupri-inquiries@uiowa.edu) | (319) 384-3831