

Clinical Pathways, Reimagined: Better Care, Smarter Resource Use

Clinical Pathways have always been about a straightforward but difficult goal: Delivering the best possible care while directing limited clinical resources where they can do the most good. **That goal has not changed – but the conditions around it have.** Rising costs, more complex patients, and growing accountability for quality and total cost of care are exposing the limits of broad, guideline-based care management. Today's health care delivery models have produced pockets of improvement but have not reliably kept pace with rising costs or the clinical and social complexity of today's highest-need patients.

Broad eligibility criteria spread limited clinical resources across members with very different levels of risk. Utilization-based triggers (based upon clinical guidelines) often identify individuals in need only after an urgent/emergent episode or hospital admission; and health plan-led disease management programs remain disconnected from health care provider workflow, specialty care plans, and other non-medical barriers that determine whether a patient can follow treatment. The result is frequently reactive, fragmented care associated with avoidable utilization and higher costs for people with chronic illness.

Emergence of Target-Specific Clinical Pathways

Payers and providers interested in moving beyond one-size-fits-all care management are looking into adoption of target-specific clinical pathways. **These pathways concentrate multidisciplinary expertise, predictive risk signals, timely outreach, and condition-specific actions on smaller patient cohorts whose utilization is both high and meaningfully modifiable.** They translate clinical evidence into a shared operating model across the health plan, care team, and patient—clarifying who acts, when escalation occurs, and which lower-cost intervention should happen before a crisis.

By aligning resources to identifiable risks and coordinating care around the individual, target-specific pathways offer a practical way to reduce fragmentation, prevent avoidable acute events, and improve outcomes at scale.

Reported results include reductions of up to 42% in emergency visits and 71% in hospital admissions among targeted cohorts.

Examples:

Program	Approach	Outcome
CHF: Adverse outcomes are often associated with build- up of fluids, that may not be detected early enough	Remote weight monitoring and rapid post-discharge telehealth	18% fewer 30-day readmissions; \$3,200 annual savings per member
Oncology: Medications have known toxicities with patients initially experiencing side effects that may seem insignificant at first, but can quickly escalate	Guideline-based care, 24/7 nurse triage, and same-day clinics	14% fewer ED visits; 11% lower oncology spend
CKD/ESRD: A standard single eGFR lab result only shows a snapshot of kidney health, while tracking change over time allows clinicians to flag a rapid decline before it drops to critical levels	Predictive eGFR tracking and pre-dialysis coaching	42% fewer emergency dialysis starts; \$22,000 lower first-year transition spend

How Targeted Pathways Differ from Clinical Guidelines

Clinical guidelines describe what evidence-based care should include, generally offering recommendations that clinicians adapt through professional judgment to an individual patient. A **target-specific pathway** goes further by converting those recommendations into a standardized, multidisciplinary operating model for a defined patient scenario.

Targeted pathways also create a measurable management framework. They can be integrated with clinical algorithms, electronic order sets, and quality metrics that are reviewed over time. Variances from the expected course—such as a missed follow-up, worsening biometric trend, medication issue, or social barrier—become visible triggers for intervention rather than isolated observations.

In this way, **clinical guidelines** provide the evidence base, while **targeted pathways** organize the people, processes, data, and accountability needed to deliver that evidence consistently, reduce unwarranted variation, and improve outcomes and cost performance.



Structural Pillars

Advanced Predictive Analytics & Risk Stratification Infrastructure

Analytics Framework:

Targeted pathways require an analytics infrastructure that predicts near-term worsening health status, avoidable utilization, and emerging care gaps rather than merely reporting who generated high costs in the past. The objective is not simply to rank members from highest to lowest risk, but to identify the intersection of clinical severity, likelihood of an adverse event, and opportunity for a timely intervention. That distinction helps teams avoid concentrating resources on members whose utilization/cost profile is high but largely unavoidable while overlooking patients whose risk is still developing and therefore more modifiable.

Unified member profiles supporting targeted pathways combine medical and pharmacy claims with electronic health recorded diagnoses, medications, laboratory trends, vital signs, encounter history, specialist activity, and structured and unstructured clinical documentation. Remote-monitoring telemetry, patient-reported outcomes, call-center interactions, and community-level socioeconomic indicators can add signals that traditional claims feeds miss.

It is important to note that community-level indicators should be treated as contextual signals- not assumptions about an individual – and paired with direct screening to confirm the member’s specific needs.

The data should be organized longitudinally so models can detect **over-time**, for example, a rising weight trend in heart failure, declining kidney function, repeated medication gaps, increasing symptom burden, or a pattern of missed appointments.

Advanced models, including the **Johns Hopkins ACG system**, can be incorporated to assess multiple dimensions of need rather than relying on a single severity score. These may include predicted hospitalization or emergency department use, disease-progression risk, medication-related risk, care fragmentation, rising risk status overall, and expected resource need.

ACG reporting is designed to surface Patient Need Groups which include frailty and care-coordination markers, specialist counts, avoidable emergency utilization, unplanned or readmissions, and predicted hospitalization.

Example: A health plan could use ACG outputs to identify a member with diabetes, heart failure, multiple medications, fragmented specialist care, and increasing acute-care use as having elevated near-term hospitalization risk and high care-coordination need. Rather than enrolling the member in a generic disease management program based on historical cost alone, the plan could route the member to a targeted clinical pathway for nurse outreach, pharmacy/medication reconciliation, primary-care and specialty coordination and closer monitoring (with service intensity adjusted as the risk profile changes).

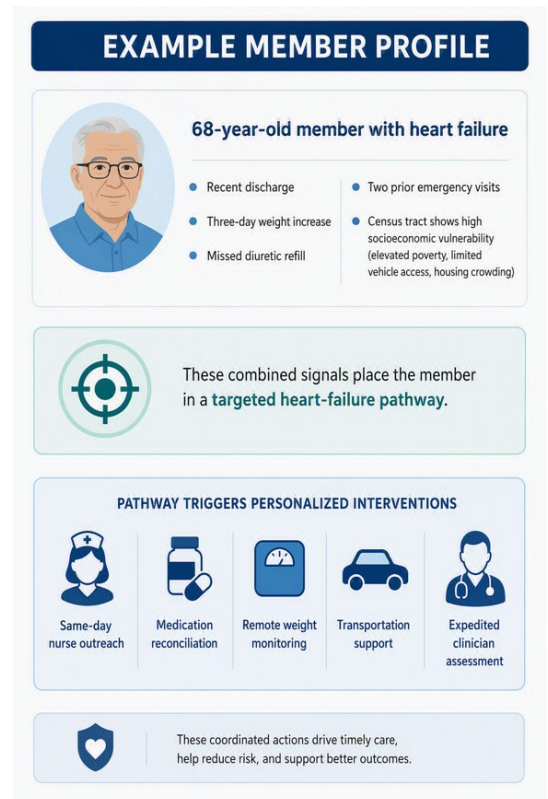
Applied risk stratification:

Applied (resulting) risk stratification can be used to translate predictions into operational patient cohorts with explicit enrollment and escalation criteria. A highest-priority tier might receive immediate nurse review, pharmacist-lead medication reconciliation, specialist coordination, and remote monitoring; a rising but secondary-risk tier might receive targeted outreach, diagnostic follow-up, or self-management support; and a stable tier might remain under automated surveillance.

Each flag should identify the reason for risk, the recommended next action, the responsible team member, and the expected response time. Scores should refresh when new claims, clinical, laboratory, or monitoring data arrive so a patient can move between tiers as circumstances change.

Integration with Clinical Notes and Social Determinants of Health (SDoH):

As a further enhancement, natural-language processing (NLP) can convert clinical notes and patient narratives into structured risk flags—for example, identifying medication affordability, caregiver needs, transportation problems, housing instability, or worsening symptoms that may not appear in coded fields.



Because social barriers can undermine clinical plans, pathways may also incorporate Social Determinants of Health (SDoH) screening and responses related to financial strain, food insecurity, and transportation access.

- **Financial strain:** Connect members with lower-cost medicines and assistance programs.
- **Food insecurity:** Offer tailored meals or nutrition support.
- **Transportation barriers:** Arrange non-emergency transportation to reduce missed care.

Those insights become valuable only when they trigger a defined pathway action, such as a social-service referral, medication review, earlier visit, or clinician escalation. Programs should monitor not only predictive accuracy but also outreach completion, acceptance of services, time to intervention, preventable utilization, clinical outcomes, and net savings.

Models should be recalibrated as populations and practice patterns change, reviewed by clinicians, and audited across relevant subgroups for missing data, false negatives, and disparate impact. This closed-loop process turns risk stratification into a continuously learning clinical capability rather than a static semi-annual report.

Examples: Data-Enabled Target-Specific Pathways

Targeted pathway	Integrated signals	Risk trigger	Pathway response
Heart failure deterioration	Daily weight, blood pressure, oxygen saturation, symptoms, diuretic fills, recent discharge, and prior utilization	Worsening congestion pattern or elevated short-term readmission risk	Nurse review within hours; medication reconciliation; clinician-directed diuretic adjustment; expedited telehealth or in-person assessment
Chronic Kidney Disease (CKD) progression and planned transition	Longitudinal eGFR, urine albumin-creatinine ratio, creatinine, comorbidities, nephrotoxic medications, claims, and nephrology (specialist) access	Accelerating eGFR decline or predicted progression to advanced kidney disease	Nephrology escalation; medication and blood-pressure optimization and education; renal-replacement planning; vascular-access referral when appropriate
Oncology symptom escalation	Treatment regimen, EHR history, patient-reported symptoms, laboratory results, medication use, triage calls, and recent acute-care encounters	New or worsening treatment-related symptoms reported between visits	Automated symptom triage; same-day nurse contact; supportive medication protocol; urgent clinic evaluation or emergency escalation based on severity
Diabetes instability with social risk	Continuous glucose-monitoring trends, A1C, pharmacy fills, hypoglycemia history, diet, and food-security screening, and missed visits	Persistent high or low glucose patterns combined with adherence or access barriers	Pharmacist medication review; individualized glucose coaching; lower-hypoglycemia-risk regimen consideration; nutrition or food-support referral

Implementation Strategy and Provider Workflow Integration

The ultimate success of any target-specific clinical pathway depends on its operational execution and integration into the local provider ecosystem.

Plan sponsors and/or payers need to avoid creating siloed care-management applications that require physicians to log into separate web portals, a practice that drives extreme administrative burden and provider fatigue. Instead, plan sponsors should leverage advanced interoperability standards—specifically **Electronic Health Record (EHR) integrations via HL7 FHIR and SMART on FHIR applications**—to embed target-specific insights directly into the physician's native workflow at the point of care.

Other Elements of Provider Workflow Integration include:



1. Specialized Care Teams:

Transitioning patients from generalist case managers to multidisciplinary specialists (e.g., dedicated heart failure nurses, oncological navigators) who are schooled and understand at a deeper level specific disease trajectories.



2. Continuous Digital Monitoring:

Utilizing connected remote patient monitoring (RPM) equipment to log biometrics and provide early flags to clinical teams.



3. Value-Based Care Alignment:

Restructuring provider networks around bundled payments or condition-specific capitation to incentivize outcomes rather than volume.



4. Ethics, Algorithmic Bias, and Data Privacy Frameworks

Predictive models and expanded data sources as the foundation for targeted clinical pathways require strong safeguards for equity, transparency, and privacy.

Example: When a prioritized member schedules an office visit, the predictive risk alert, outstanding care gaps, and tailored pathway recommendations populate directly within the provider's active EHR screen. By aligning these clinical insights with value-based care reimbursement structures, such as shared savings models or targeted capitation payments, payers transform abstract data into actionable, friction-free clinical decisions that sustainably lower the total cost of care.

In Summary:

Ultimately, target-specific clinical pathways are a way to make the original promise of clinical pathways more actionable: better care, delivered earlier, with resources focused where they can have the greatest impact. As cost pressures and patient complexity continue to rise, organizations that can convert data, evidence, and care-team coordination into timely interventions will be better positioned to improve outcomes, reduce avoidable utilization, and make the promise of value-based care a practical reality.