Predictive Analytics
A clinical tool for healthcare transformation

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Objectives

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- Predictive analytics can play a role in healthcare to improve quality outcomes
- Understand how BCBSM has developed clinical models to identify at-risk members
- The future use of predictive analytic tools

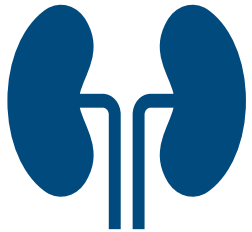
The Future of Healthcare and Predictive Analytics

- Clinical tools to identify at-risk patients
- Shift approach to become more proactive
- Improve operational efficiency
  - Reduce staff burnout
  - Transform the focus of care
  - Use data not readily available to guide clinical decisions

Physicians and care teams can use predictive analytics to enhance decision-making, improve patient outcomes, and provide relief by aggregating information

Clinical Predictive Model

Chronic Kidney Disease Predictive Model

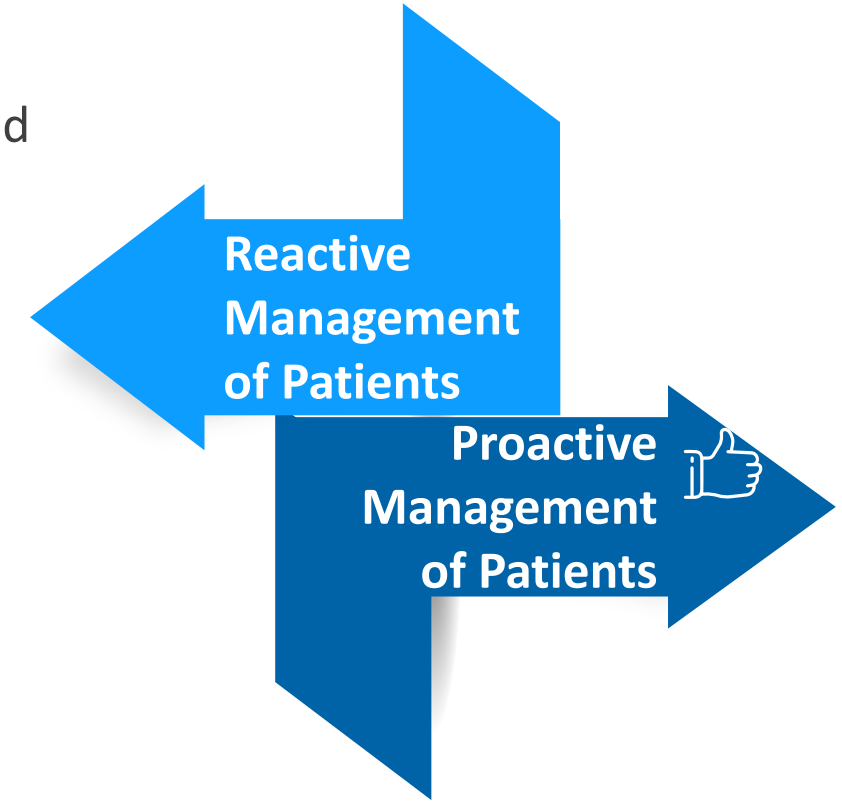


Identify patients who are at-risk
of undiagnosed, under-diagnosed or developing
chronic kidney disease

Goal: Engage patients *proactively* to improve outcomes

Reactive

CKD:
Patients frequently are not diagnosed with CKD until they “crash” into dialysis



Proactive

CKD:
Identify patients with CKD earlier in the process so that we can limit disease progression and improve outcomes

What is the CKD Model trying to predict?

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CKD: Lab Monitoring	The lab monitoring solution is not a typical predictive model rather, the solution leverages complex signal processing algorithms to **map multiple GFR and ACR tests at different time points in the past to the KDIGO risk categories**
CKD: Clinical Model	For members *without either a GFR and ACR test* ***AND*** *without a diagnosis of CKD*, the predictive model is **identifying which members may develop CKD in the next 12 months**

Predictive models leverage a wide array of data sources and customized data points for these problems

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Member Demographic

- Age groups
- Gender

SDoH

- Household income level
- Financial assistance
- Likelihood of living alone
- Food resource availability
- ADI national index

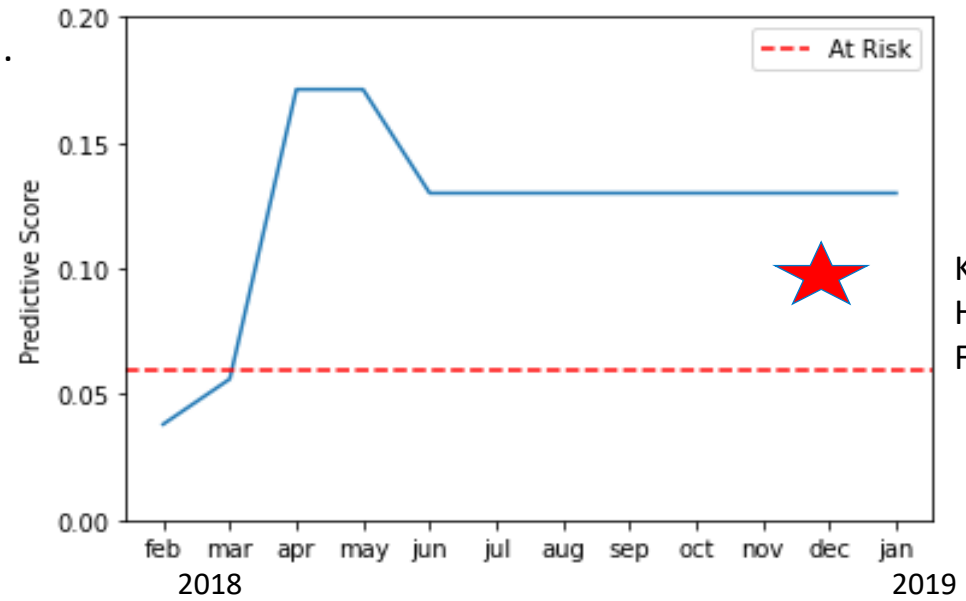
Utilization

- PCP & Specialist visits
- Outpatient & Inpatient hospitalizations
- ER Visits
- Length of hospital stay
- Total utilization visits
- Cost trend

Member Health Profile

- Chronic condition diagnosis
- Ambulatory care sensitive conditions (ACSC)
- Clinical diagnosis groups (CCS)
- Clinical procedure groups (CCS)
- BETOS codes
- Surgical procedures
- Customized ICD 10 based medical conditions: Body pains, Smoking related diagnosis stages of cancer, liver, and kidney, etc.
- Therapeutical classes for medications
- Elixhauser comorbidity index
- Comorbidity count trend over time
- GFR and ACR lab values

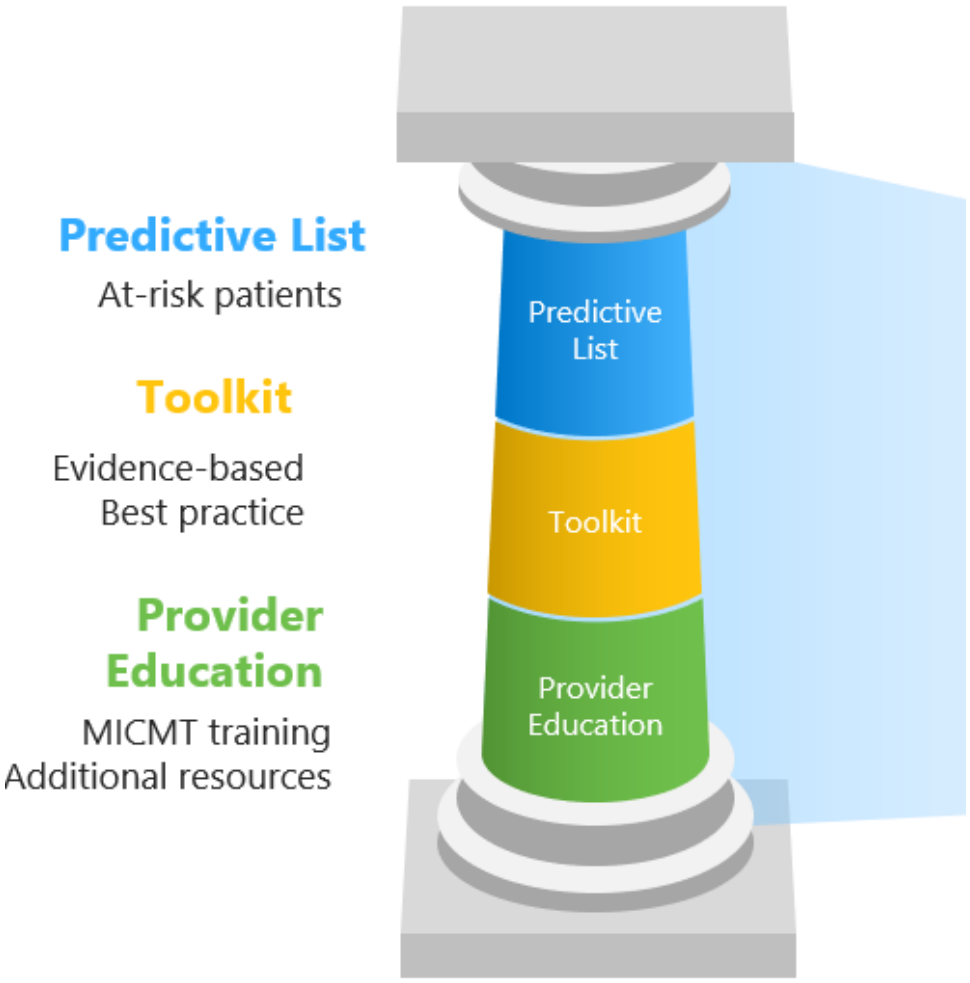
Clinical Example Male – 61 y/o



KDIGO High Risk Flag

First CKD Claim diagnosis: Dec 2019

Predictive Models: Require key components to create success

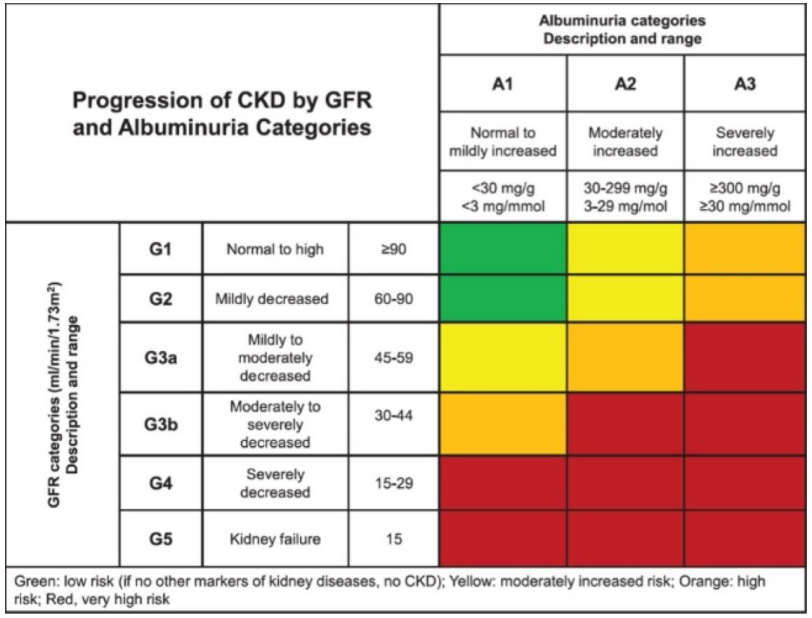


- List of risk stratified patients available on the monthly PDCM list
- Clinical toolkits with evidence-based best practice guidelines
- Educational resources
  - Links to specialty sites
  - MICMT
    - On-demand recordings
    - Live trainings
    - Credit for selected trainings
    - Eligible for training reimbursement

CKD Model Risk Categories – EXAMPLE

- **Clinical Risk Category:** Uses Predictive Algorithm, No lab input, No CKD diagnosis
  - 3 Categories : AT RISK, MODERATE, HIGH
  - Modeling using Claims data

- **Lab Risk Category**: Uses lab data
  - 4 Categories: AT RISK, MODERATE, HIGH, VERY HIGH
  - Modeling using KDIGO Heat Map to assign risk

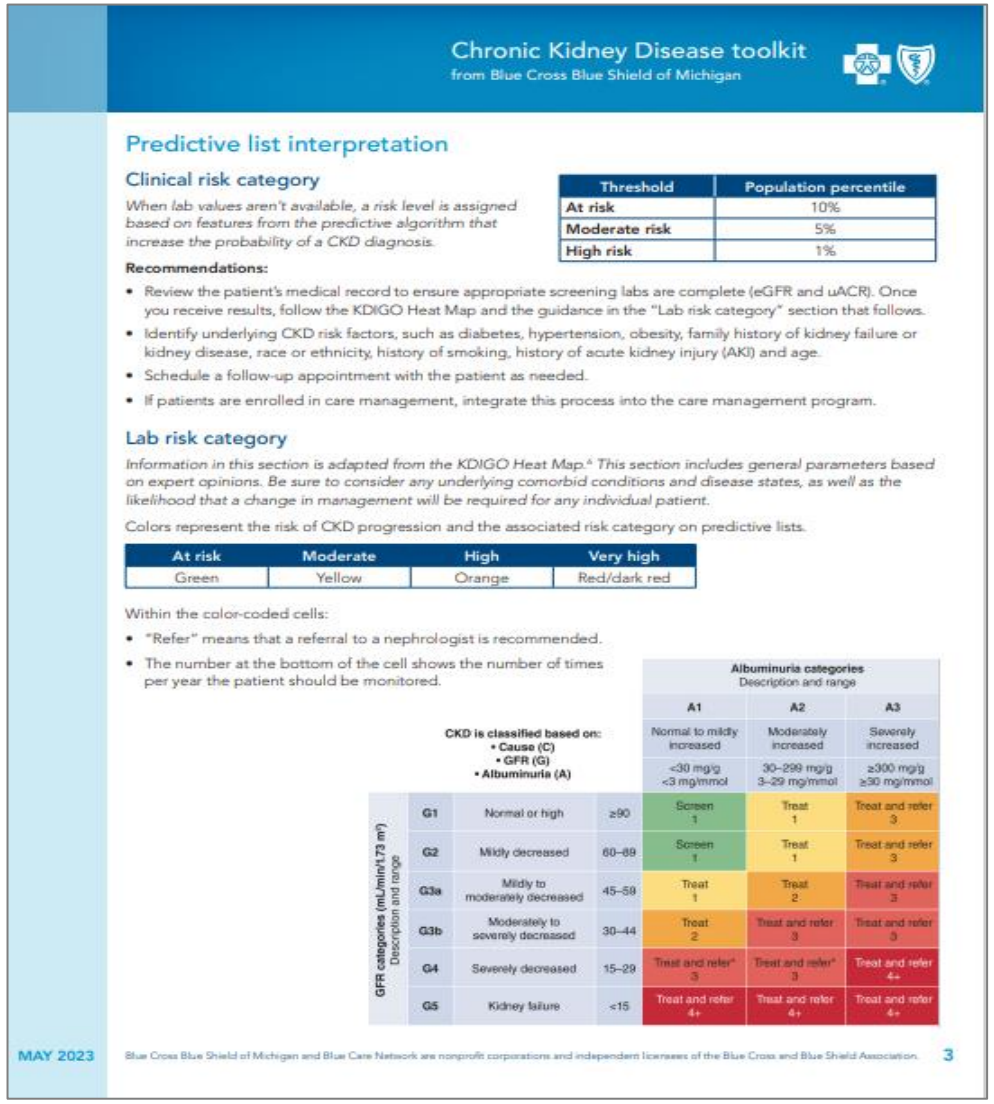


Progression of CKD by GFR and Albuminuria Categories				Albuminuria categories Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30-299 mg/g 3-29 mg/mol	≥300 mg/g ≥30 mg/mmol
GFR categories (ml/min/1.73m²) Description and range	G1	Normal to high	≥90			
	G2	Mildly decreased	60-90			
	G3a	Mildly to moderately decreased	45-59			
	G3b	Moderately to severely decreased	30-44			
	G4	Severely decreased	15-29			
	G5	Kidney failure	15			

Green: low risk (if no other markers of kidney diseases, no CKD); Yellow: moderately increased risk; Orange: high risk; Red, very high risk

ClinicalRiskCategory	LabRiskCategory	ChangeStatus	AdditionalStatus	CKDStage
	AT RISK	No change	None	None
HIGH		No change	None	None
	HIGH	risk worsening (moderate -> high)	None	3A
MODERATE		No change	None	None
	HIGH	No change	None	None
MODERATE		No change	None	None
	VERY HIGH	No change	None	None
HIGH		No change	None	None
	MODERATE	No change	None	2
AT RISK		newly identified	None	None

Chronic Kidney Disease Toolkit



Chronic Kidney Disease toolkit
from Blue Cross Blue Shield of Michigan

Predictive list interpretation

Clinical risk category

When lab values aren't available, a risk level is assigned based on features from the predictive algorithm that increase the probability of a CKD diagnosis.

Threshold	Population percentile
At risk	10%
Moderate risk	5%
High risk	1%

Recommendations:

- Review the patient's medical record to ensure appropriate screening labs are complete (eGFR and uACR). Once you receive results, follow the KDIGO Heat Map and the guidance in the "Lab risk category" section that follows.
- Identify underlying CKD risk factors, such as diabetes, hypertension, obesity, family history of kidney failure or kidney disease, race or ethnicity, history of smoking, history of acute kidney injury (AKI) and age.
- Schedule a follow-up appointment with the patient as needed.
- If patients are enrolled in care management, integrate this process into the care management program.

Lab risk category

Information in this section is adapted from the KDIGO Heat Map.[A] This section includes general parameters based on expert opinions. Be sure to consider any underlying comorbid conditions and disease states, as well as the likelihood that a change in management will be required for any individual patient.

Colors represent the risk of CKD progression and the associated risk category on predictive lists.

At risk	Moderate	High	Very high
Green	Yellow	Orange	Red/dark red

Within the color-coded cells:

- "Refer" means that a referral to a nephrologist is recommended.
- The number at the bottom of the cell shows the number of times per year the patient should be monitored.

CKD is classified based on: • Cause (C) • GFR (G) • Albuminuria (A)				Albuminuria categories Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30–299 mg/g 3–29 mg/mmol	≥300 mg/g ≥30 mg/mmol
GFR categories (mL/min/1.73 m²) Description and range	G1	Normal or high	≥90	Screen 1	Treat 1	Treat and refer 3
	G2	Mildly decreased	60–89	Screen 1	Treat 1	Treat and refer 3
	G3a	Mildly to moderately decreased	45–59	Treat 1	Treat 2	Treat and refer 3
	G3b	Moderately to severely decreased	30–44	Treat 2	Treat and refer 3	Treat and refer 3
	G4	Severely decreased	15–29	Treat and refer* 3	Treat and refer* 3	Treat and refer 4+
	G5	Kidney failure	<15	Treat and refer 4+	Treat and refer 4+	Treat and refer 4+

MAY 2023

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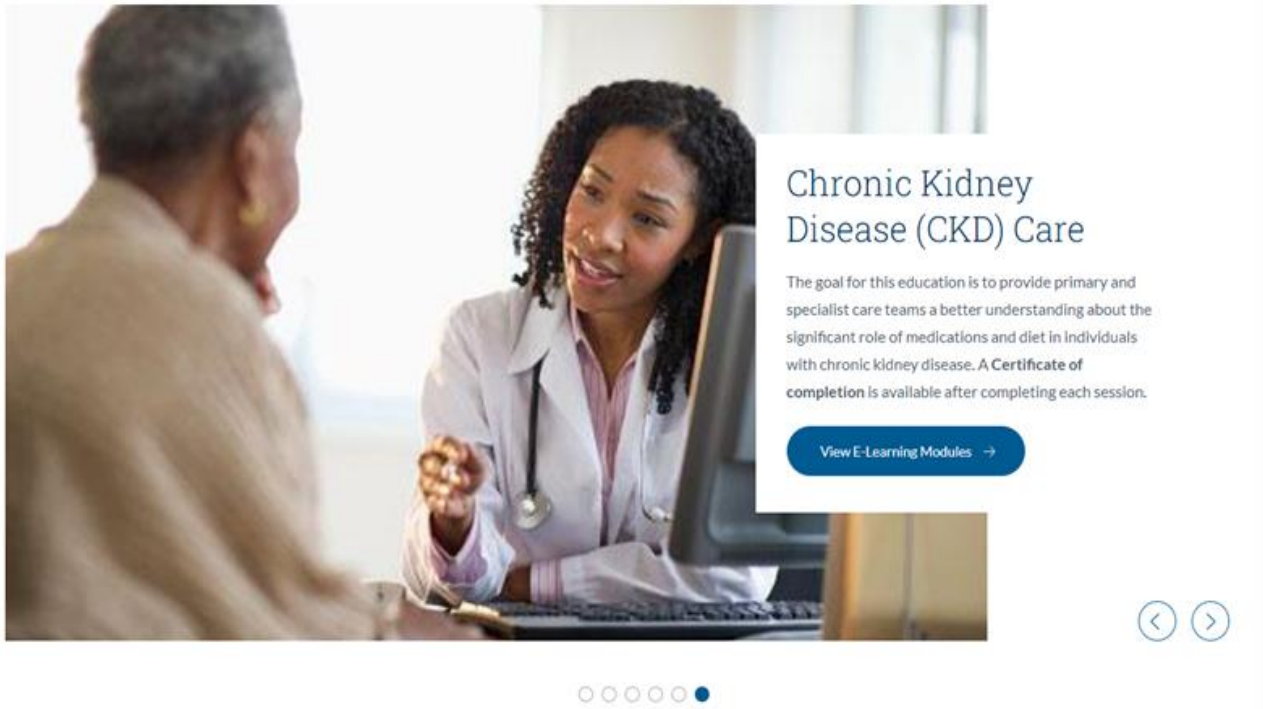
- Appropriate screening labs
- Classification of CKD Stage
- Best Practice CKD Interventions
- Timing for Nephrology referral

Chronic Kidney Disease Education



Michigan Institute for Care Management and Transformation

CKD Management: Pharmacist Perspective

A Care Manager's Guide to Understanding Nutrition and Early CKD

A Care Manager's Guide to Understanding Nutrition and Stage 4 and Stage 5 CKD

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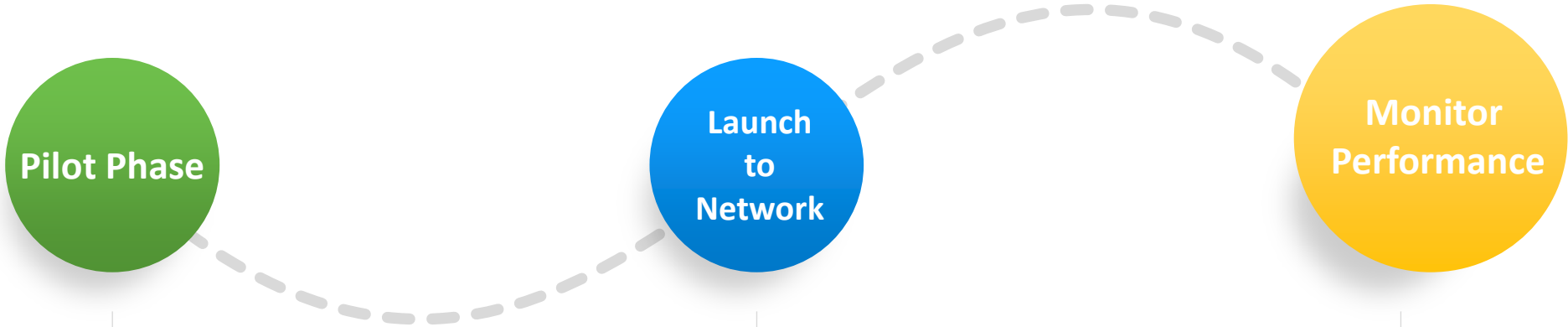
CKD Predictive Model Timeline



2023

Pilot with select Physician Organizations

2024

Increase scope to include all Physician Organizations

2024-2025

Monitor process and evaluate outcome data to determine expansion outside of PGIP programs

New-PGIP Incentive coming for 2024

- Physician Organizations already receive a monthly list of BCBSM members eligible for Provider Delivered Care Management (PDCM)
- Beginning in March 2024, the PDCM list will have a new section where members will be identified and stratified by **CKD risk** as developed by the predictive model
- POs will have the option to participate in an incentive program to help distribute the predictive lists to physicians and practice units who want to participate in this CKD initiative
  - **Program opt-in due by 2/15/24**
- If POs and individual primary care providers opt in for program participation, they will also receive the toolkit and additional resources for CKD training

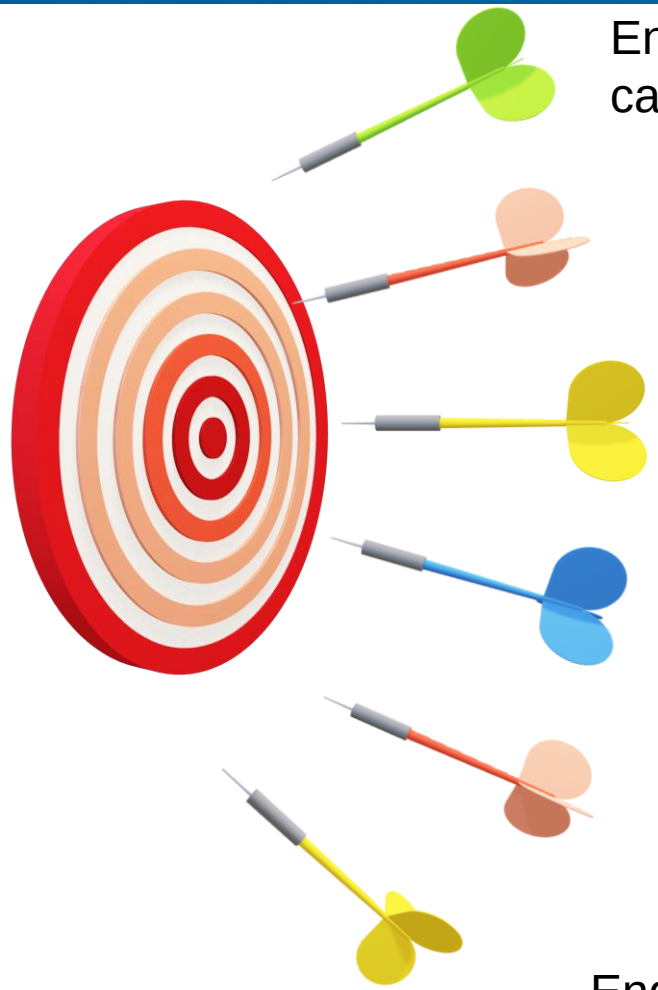
Specialist Team-Based Care

Specialist Team-Based Care (STBC)

Initiative description

- The STBC initiative started in 2020
- This initiative promotes care management in specialists' offices
- The five specialties eligible to join the program are:
  - Cardiology
  - **Endocrinology**
  - **Nephrology**
  - Oncology
  - Pulmonology
- POs apply for this program in the 1st quarter of the year
- If accepted, the specialist offices will receive infrastructure funding to build their care management program and then ultimately be eligible for performance VBR

Specialist Team-Based Care: Goals



Encourage more specialists to adopt a team-based care approach focused on care management

Engage specialists with a VBR opportunity based on activities within their control

Establish lines of communication among PCPs and specialists and encourage regular communication among care team members

Decrease unnecessary ED visits, hospital admissions and readmissions

Implement team-based care to increase provider and patient satisfaction

Engage patients in their own health care

Specialist Team-Based Care
Eligibility Requirements

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Physician Organizations

POs must be onboarded to the following statewide HIE use cases:

- Active Care Relationship Service (ACRS)
- Admission, Discharge, Transfer (ADT)

- Participate in STBC workgroup meetings

Specialists

Participating specialists must:

- Secure a care manager
- Participate in one STBC workgroup meeting annually

Care Team

The care team must be supported by a health care professional that:

- Provides care management services
- Completes required training
- Participates in any STBC workgroup meetings

Annual PO attestation certifying agreement to these requirements for each of their participating practices will be required for each Cohort.

Specialist Team Based Care and MCT2D