Risk Stratification in Population Health Management

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The 5 Essential Elements to Population Health

• An efficient and effective Population Health Management Program contains:
  1. Population Analysis (Clinical/Demographic Data)
  2. Payer Data (Claims & Member Attribution)
  3. Clinical Integration (Technology)
  4. Care Management & Care Coordination
  5. Patient Engagement

• Population Health strategies focus on the identification, stratification and mitigation of risk indicators (both emerging and existing risk factors)
Population Health Management: Identification

Must Haves –

Do You Have Access To:

• **Necessary Clinical & Practice Management Data?**
  • Clinical Information (ie: Lab Results, Health Maintenance info)
  • Visit/Encounter Data
  • Demographic Data (ie: zip code)
  • Payer Data (ie: Health Plan, Managed Care, FFS, etc)

• **Claims Data & Member Rosters (Attribution Files)?**
  • Define Population
  • Visualize Care Gaps
  • Cost of Care
  • Pharmacy/Refill Data
Population Health Management: How to Identify

Must Haves –

Do You Have Access To:

• **Consumable & Actionable Data**
  • Can your system ingest, filter, and use the data meaningfully?
  • Is the data normalized?

• **Registries/Population Lists Based on Specific Criteria**

• **Risk Stratification Tool**
  • Is Risk defined for your population and is it measurable?

• **Pre & Post-Visit Planning Processes**
Who Needs Care Management?

• Patients identified as needing care management, are those who have an elevated risk of a negative impact on the goals of Quadruple Aim

• By further evaluating these populations according to risk level, we are able to prioritize our resource allocation and intervention plans
Rick Stratification Tools

Risk Stratification Models:
- Framingham Risk Score
- Adjusted Clinical Groups (ACGs)
- Hierarchical Condition Categories (HCCs)
- Elder Risk Assessment
- Chronic Comorbidity County
- Charlson Comorbidity Index
- Minnesota Health Care Home Tiering

Systems for Risk Stratification:
- Conifer
- Evolent Health
- I2i Systems
- Mediqueire
- IBM (Phytel)
- Wellcentive
- Explorys (IBM)
- RxPredict (not rated by KLAS but does use predictive modeling and interfaces with NextGen)
- ** Most EMRs offer a Population Health Solution or some sort of Risk Stratification as well
Resources

• **NACHC PRAPARE Tool:**
  • Link to the NACHC one-pager:
  • Introduction & Implementation Tool Kit:
• EHR Templates available for Epic, eCW, GE Centricity, NextGen

Risk Stratification Using Predictive Analytics & (SDOH) Social Determinants of Health:
• (sample solutions):
  • Forecast Health
  • SCIO Health Analytics
  • Verisk Health
### Manual Risk Stratification

#### Risk Stratification Methodology

<table>
<thead>
<tr>
<th>0 Points</th>
<th>1 Point</th>
<th>2 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Chronic Conditions from following, 2 point per condition:</strong>&lt;br&gt;Diabetes&lt;br&gt;Hypertension&lt;br&gt;COPD&lt;br&gt;Asthma&lt;br&gt;Obesity&lt;br&gt;Depression&lt;br&gt;Other Mental Disorder&lt;br&gt;HIV&lt;br&gt;Cancer</td>
<td>0</td>
<td>0-2</td>
</tr>
<tr>
<td><strong>2. Abnormal/Uncontrolled Value</strong>&lt;br&gt;A1C&lt;br&gt;BP&lt;br&gt;BMI</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>3. 1 Point per Social Behavior:</strong>&lt;br&gt;Smoker&lt;br&gt;Drug/Alcohol Abuse&lt;br&gt;Anxiety</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>4. Access/Utilization:</strong>&lt;br&gt;1-2 visits/quarter: 0 points&lt;br&gt;3-5 visits/quarter: 1 point&lt;br&gt;6+ visits/quarter: 2 points</td>
<td>0</td>
<td>1-2 visits/qtr.&lt;br&gt;1-2 ED visits/qtr.&lt;br&gt;3+ visits/qtr.&lt;br&gt;2+ ED visits/qtr.</td>
</tr>
<tr>
<td><strong>5. Provider Referral</strong>&lt;br&gt;N&lt;br&gt;Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6. SDOH:</strong>&lt;br&gt;Homeless&lt;br&gt;Race/Ethnicity&lt;br&gt;Income/Insurance&lt;br&gt;Literacy&lt;br&gt;Geographic&lt;br&gt;Transportation</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

| TOTAL RISK SCORE | Low: 0-3 | Mid: 4-6 | High: 7-9 | Critical: >9 |

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Who and How Many?

- Identifying a patient's health risk for use in planning, developing, and implementing a personalized care plan by the care team, in collaboration with the patient.

- In a practice panel of 1,000 patients, there will likely be close to 200 patients (20%) who could benefit from an increased level of support.
  - This 20% of the population accounts for 80% of the total health care spending in the United States, with the very highest medical costs concentrated in the top 1%.

- 1 FTE Care Manager can manage a panel of approx. 150 patients (depending on level of risk and acuity & presence of Care Coordination support).
Care Management vs. Care Coordination – Which is it

**Care Management**
- Care Management is defined as a set of activities intended to improve patient care and reduce the need for medical services by helping patients and caregivers more effectively manage health conditions.\(^3\)

**Care Coordination**
- Care coordination involves deliberately organizing patient care activities and sharing information among all of the participants concerned with a patient's care to achieve safer and more effective care.\(^2\)
What is Care Management?

• Care Management is a “primary means of managing the health of a defined population”.

• Care Management is centered around the concept that appropriate interventions for individuals within a given population will:
  • Reduce health risk
  • Decrease cost of care
  • Improve the health of the population

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Roles on the Care Team

• Practice Based Clinical Team:
  • Provider
  • RN/LPN/MA
  • Health Educator/Outreach
  • BH

• Population Health Team
  • Care Coordinators: Referral Coordinators, Pt.Navigators
  • LISW, Pharmacy, BH
  • CHW

• Care Management Team
  • RN/LPN
Each of the 6 Considerations has a Correlating Prevention Level & Goals

- **Level 1** PRIMARY PREVENTION
  - **GOAL:** To prevent onset of disease (Low Resource Use)

- **Level 2** PRIMARY PREVENTION
  - **GOAL:** To prevent onset of disease (Low Resource Use)

- **Level 3** SECONDARY PREVENTION
  - **GOAL:** To treat a disease, reduce rising risk, and avoid serious complications (Moderate Resource Use)

- **Level 4** SECONDARY PREVENTION
  - **GOAL:** To treat a disease, reduce rising risk, and avoid serious complications (Moderate Resource Use)

- **Level 5** TERTIARY PREVENTION
  - **GOAL:** Treat the late or final stages of a disease and minimize disability (High Resource Use)

- **Level 6** CATASTROPHIC CARE
  - **GOAL:** May range from restoring health to only providing comfort care (Extremely High Resource Use)

# Role Interventions

<table>
<thead>
<tr>
<th>Population</th>
<th>Transitions in Care</th>
<th>Chronic Stable</th>
<th>Hospital Admissions</th>
<th>Chronic Unstable/SDoH</th>
<th>BH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Role</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice Based Clinical Care Team</td>
<td>Practice Based Clinical Care Team</td>
<td>RN</td>
<td>RN/Care Management Team</td>
<td>BH Care Manager/LISW</td>
<td></td>
</tr>
<tr>
<td><strong>Interventions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Education</td>
<td>Chronic Disease Management</td>
<td>Risk Assessment/Comprehensive Evaluation</td>
<td>High Risk Nursing Assessments</td>
<td>Psychosocial Assessments</td>
<td></td>
</tr>
<tr>
<td>Gap Closure</td>
<td>Goal Setting</td>
<td>Medication Review</td>
<td>Physical Barriers to Care</td>
<td>BH Intervention</td>
<td></td>
</tr>
<tr>
<td>Goal Setting</td>
<td>Lifestyle Modification</td>
<td>Rx Renewals</td>
<td>Goal Setting</td>
<td>MH Community Resources</td>
<td></td>
</tr>
<tr>
<td>Life Style Modification</td>
<td>Gap Closure</td>
<td>Motivational Interviewing</td>
<td>Medication Review</td>
<td>Shared Care Plans</td>
<td></td>
</tr>
<tr>
<td>Post Acute Discharge Care Planning</td>
<td>Disease Focus Evaluation</td>
<td>Goal Setting</td>
<td>Patient Centered Care Plan Development</td>
<td>Referral Management</td>
<td></td>
</tr>
<tr>
<td>Redirection to Primary Care</td>
<td>Self Management/PCP Utilization</td>
<td>Disease Management</td>
<td>Chronic Disease Management/Reduce Cost</td>
<td>BH/PCP Coordination</td>
<td></td>
</tr>
</tbody>
</table>

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# Role Scalability

<table>
<thead>
<tr>
<th>Role</th>
<th>Transitions in Care</th>
<th>Chronic Stable</th>
<th>Hospital Admissions</th>
<th>Chronic Unstable/SDoH</th>
<th>BH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt. Identification</td>
<td>2 or more ED visits or ED Visit with new condition</td>
<td>2 or more chronic conditions or 1 new condition</td>
<td>Disease related hospital admission</td>
<td>2 or more chronic conditions with min. 1 unstable</td>
<td>1 or more BH Diagnosis</td>
</tr>
<tr>
<td>Role</td>
<td>PHM Team/Practice Based Clinical Team</td>
<td>PHM Team/Practice Based Clinical Team</td>
<td>RN</td>
<td>RN/Care Management Team</td>
<td>BH Team/LISW</td>
</tr>
</tbody>
</table>

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**How will you define your roles and interventions?**

<table>
<thead>
<tr>
<th></th>
<th>Controlled TOC</th>
<th>Uncontrolled TOC</th>
<th>Chronic/Complex</th>
<th>BH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Definition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Point of Care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
High Risk
5%
(50% of spending)

Rising Risk/At Risk
60%

Controlled/
Low Risk
35%

PCMH

CM Plus
Care Coordination
Specialists
Community Resources

Practice Clinical Team Plus
Care coordination
Specialists
Community Resources

Practice Clinical Team

Additional Resources Needed
High Risk
5%
(50% of spending)

Rising Risk/At Risk
60%

Controlled/
Low Risk
35%

PCMH

CM RN Visits
Bi-weekly SM Calls
Care Plan Reassessment
Coordination Follow Up
TOC Medication Reconciliation

PCP Visit Care Plan assessment
TOC Follow up
Medication Reconciliation
Health Education

SM Plan
Coordination
Follow up

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Each of the 6 Prevention Levels has Suggested Interventions

<table>
<thead>
<tr>
<th>CARE PLAN SUGGESTIONS</th>
<th>CARE PLAN SUGGESTIONS</th>
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<th>CARE PLAN SUGGESTIONS</th>
<th>CARE PLAN SUGGESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Preventive screenings and immunizations</td>
<td>• Preventive screenings and immunizations</td>
<td>• Preventive screenings and immunizations</td>
<td>• Preventive screenings and immunizations</td>
<td>• Preventive screenings and immunizations</td>
<td>• Preventive screenings and immunizations</td>
</tr>
<tr>
<td>• Patient education</td>
<td>• Patient education and engagement</td>
<td>• Patient education and engagement</td>
<td>• Patient education and engagement</td>
<td>• Patient education and engagement</td>
<td>• Patient education and engagement</td>
</tr>
<tr>
<td>• Health risk assessment (annual)</td>
<td>• Health risk assessment (semi-annual)</td>
<td>• Health risk assessment (semi-annual)</td>
<td>• Health risk assessment (quarterly)</td>
<td>• Health risk assessment (quarterly)</td>
<td>• Health risk assessment (quarterly)</td>
</tr>
<tr>
<td>• Appropriate monitoring for warning signs</td>
<td>• Appropriate monitoring for warning signs</td>
<td>• Appropriate monitoring for warning signs</td>
<td>• Appropriate monitoring for warning signs</td>
<td>• Appropriate monitoring for warning signs</td>
<td>• Appropriate monitoring for warning signs</td>
</tr>
<tr>
<td></td>
<td>• Interventions for unhealthy lifestyle/habits</td>
<td>• Interventions for unhealthy lifestyle/habits</td>
<td>• Interventions for unhealthy lifestyle/habits</td>
<td>• Interventions for unhealthy lifestyle/habits</td>
<td>• Interventions for unhealthy lifestyle/habits</td>
</tr>
<tr>
<td></td>
<td>• Links to community resources to enhance patient education, self-management skills, or special facilities</td>
<td>• Links to community resources to enhance patient education, self-management skills, or special facilities</td>
<td>• Links to community resources to enhance patient education, self-management skills, or special facilities</td>
<td>• Links to community resources to enhance patient education, self-management skills, or special facilities</td>
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</tr>
</tbody>
</table>

**TEAM/PLANNED CARE**

<table>
<thead>
<tr>
<th>Care Plan Suggestion</th>
<th>TEAM/PLANNED CARE</th>
<th>Care Plan Suggestion</th>
<th>TEAM/PLANNED CARE</th>
<th>Care Plan Suggestion</th>
<th>TEAM/PLANNED CARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group visits</td>
<td>Group visits</td>
<td>Group visits</td>
<td>Group visits</td>
<td>Group visits</td>
<td>Group visits</td>
</tr>
<tr>
<td>Links to the medical neighborhood for care management, coordination of care, treatments, communication, and exchange of information with other providers and health care settings</td>
<td>Links to the medical neighborhood for care management, coordination of care, treatments, communication, and exchange of information with other providers and health care settings</td>
<td>Links to the medical neighborhood for care management, coordination of care, treatments, communication, and exchange of information with other providers and health care settings</td>
<td>Links to the medical neighborhood for care management, coordination of care, treatments, communication, and exchange of information with other providers and health care settings</td>
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<td>Links to the medical neighborhood for care management, coordination of care, treatments, communication, and exchange of information with other providers and health care settings</td>
</tr>
<tr>
<td>Health coach</td>
<td>Health coach</td>
<td>Health coach</td>
<td>Health coach</td>
<td>Health coach</td>
<td>Health coach</td>
</tr>
<tr>
<td>Referrals, as appropriate</td>
<td>Referrals, as appropriate</td>
<td>Referrals, as appropriate</td>
<td>Referrals, as appropriate</td>
<td>Referrals, as appropriate</td>
<td>Referrals, as appropriate</td>
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<tr>
<td>Home health</td>
<td></td>
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</tr>
</tbody>
</table>


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### Example using Diabetes

<table>
<thead>
<tr>
<th>Stage</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Level 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>General descriptions of risk levels</td>
<td>No known diagnoses or complex treatments</td>
<td>No known diagnoses but demonstrates warning signs or potentially significant risk factors</td>
<td>Has diagnosis, but stabilized or in control; potentially significant risk factors</td>
<td>Has diagnosis and/or complex treatment, and at higher risk for complications or potentially significant risk factors</td>
<td>Has diagnosis, complex treatment, and complications or potentially significant risk factors - goal is to prevent further complications</td>
<td>Very severe illness or condition and potentially significant risk factors</td>
</tr>
<tr>
<td>Example of using uncontrolled progression of diabetes</td>
<td>Healthy</td>
<td>Blood glucose and lipids rising, but still within desired parameters</td>
<td>Diagnosed with type 2 diabetes, blood glucose, and lipids brought within desired parameters</td>
<td>Blood glucose and lipids not within desired parameters, and financial situation impacting negatively</td>
<td>Has diabetes with early renal disease, coronary artery disease, failing eyesight, and lives alone</td>
<td>Very severe illness or condition and potentially significant risk factors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BMI elevated</td>
<td>Married, family involved</td>
<td>Recently developed Microalbuminuria</td>
<td>Developed a foot ulcer</td>
<td>Recent myocardial infarction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Smoker</td>
<td></td>
<td>Depression</td>
<td>Multiple medications</td>
<td>Progression to ESRD with renal dialysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lives alone</td>
<td>Three ER visits and two hospitalizations in past year</td>
<td>Amputation of one leg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>One ER visit and one hospitalization in past year</td>
<td>Dual eligible</td>
<td>Blind</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Medicaid/Medicare</td>
<td>Lives in nursing home</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Needs Assistance with Activities of Daily Living (ADLs)</td>
<td></td>
</tr>
</tbody>
</table>

CM Mapping

- Active vs. Delayed
- EMR Documentation
- Interaction Purpose
- Role
Aligning Care Management with Population Health Management

• Alignment of care management with population needs promotes supportive, trusting relationships between providers and patients.

• Care Management services can build a stronger relationship between the patient and provider and help extend that relationship to the care team.

• Key services directed toward the needs of particular populations include:
  • **Patient Engagement**
  • **Coordination of Care**
  • **Self-Management Support**
  • **Outreach**
Thank You!

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513-260-9392
References:

3. https://www.centerforebp.case.edu/practices/mi

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References:

2. http://www.ihi.org/resources/Pages/AchievingClinicalIntegrationHighlyEngagedPhysicians.aspx
13. The National Coalition on Care Coordination, op. cit.