AMERICA'S PHYSICIAN GROUPS

Case Studies in Excellence: How to Segment Your Population to Optimize Health Outcomes

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Use Data to Improve Health Outcomes

- Risk Stratification
- Predictive Modeling
- Care Coordination

Learning Objectives:

1.Learn how to use data to perform predictive modeling on your most complex patients
2.Learn how to use data to risk stratify your population of chronically ill patients
3.Learn how to use data to optimize care coordination for your top 20 percent of your patient population

WHO WE ARE

- APG is 300+ physician organizations
- 45 states + Puerto Rico + Washington, DC
- Risk-based, coordinated care
- Financial and clinical accountability
- Capitated and delegated model, ACOs, MA
- Taking Responsibility for America's Health

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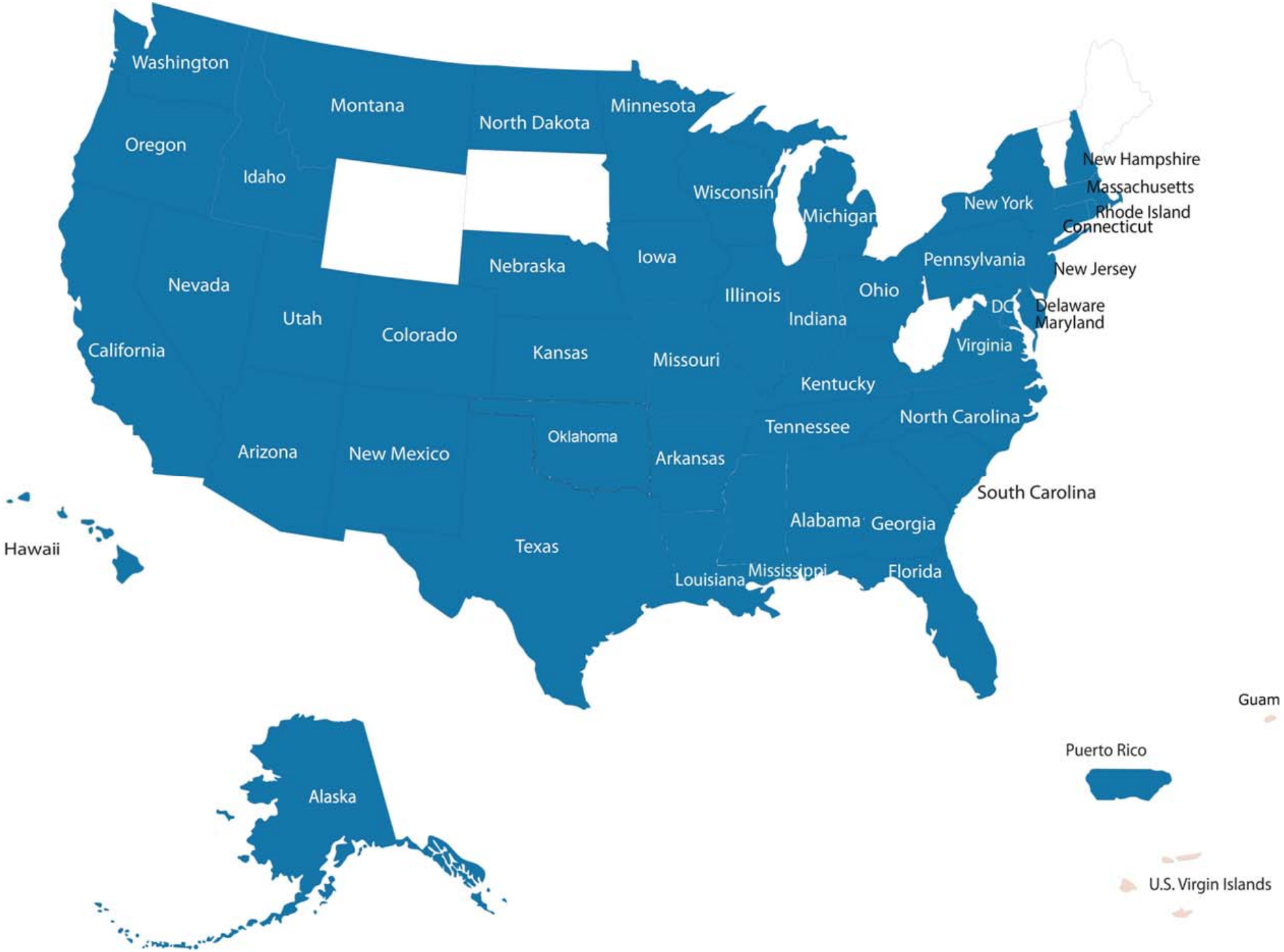

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Predictive Modeling

The foundation of predictive modeling are in case-mix adjustment

“The characteristics–age, gender and health status–of the population served by a health system or physician's office in a given period of time, which are classified by disease, diagnostic or therapeutic procedures performed, method of payment, duration of hospitalization, and intensity and type of services provided.”

Predictive Modeling

Episodic Treatment Groups (ETGs)

- By combining related services into clinically homogenous units that describe complete episodes of care, ETGs may be utilized to provide the basis of valid comparisons.

- ETGs create episodes by collecting all inpatient, outpatient, and ancillary services into mutually exclusive and exhaustive categories.

- Each specific ETG has an **Anchor Record** (Management, Surgery, Facility), **Clusters** and **Non-Anchoring Records** (Pharmacy and Ancillary)

- Each ETG include additional information of complications, co-morbidities and active treatment (surgical or active management i.e. chemotherapy)

ETG Example


Anchor record
Diagnostics
Pulmonologist
Finish Oral Abx
F/U PCP
Clean Period

ETG Level Setting

The Severity Weight of 1.0 means the episode has the same average expected resource cost compared with other episodes of the same BASE ETG

This example demonstrates a 6.8 times increase from BASE ETG

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ETG Level Setting

Increasing observed and expected costs with higher severity levels

Provider Measurement Under ETG Version 7.0				
Version 7.0 ETG plus Severity Level	Number of Episodes	Observed Cost per Episode	Expected Cost per Episode	
Diabetes, Level 4	35	$4,778	$4,232	
Diabetes, Level 3	80	$3,126	$2,847	
Diabetes, Level 2	110	$2,140	$2,120	

Example of distribution of diabetes Mellitus Severity Levels 1-4 and associated observed and expected costs

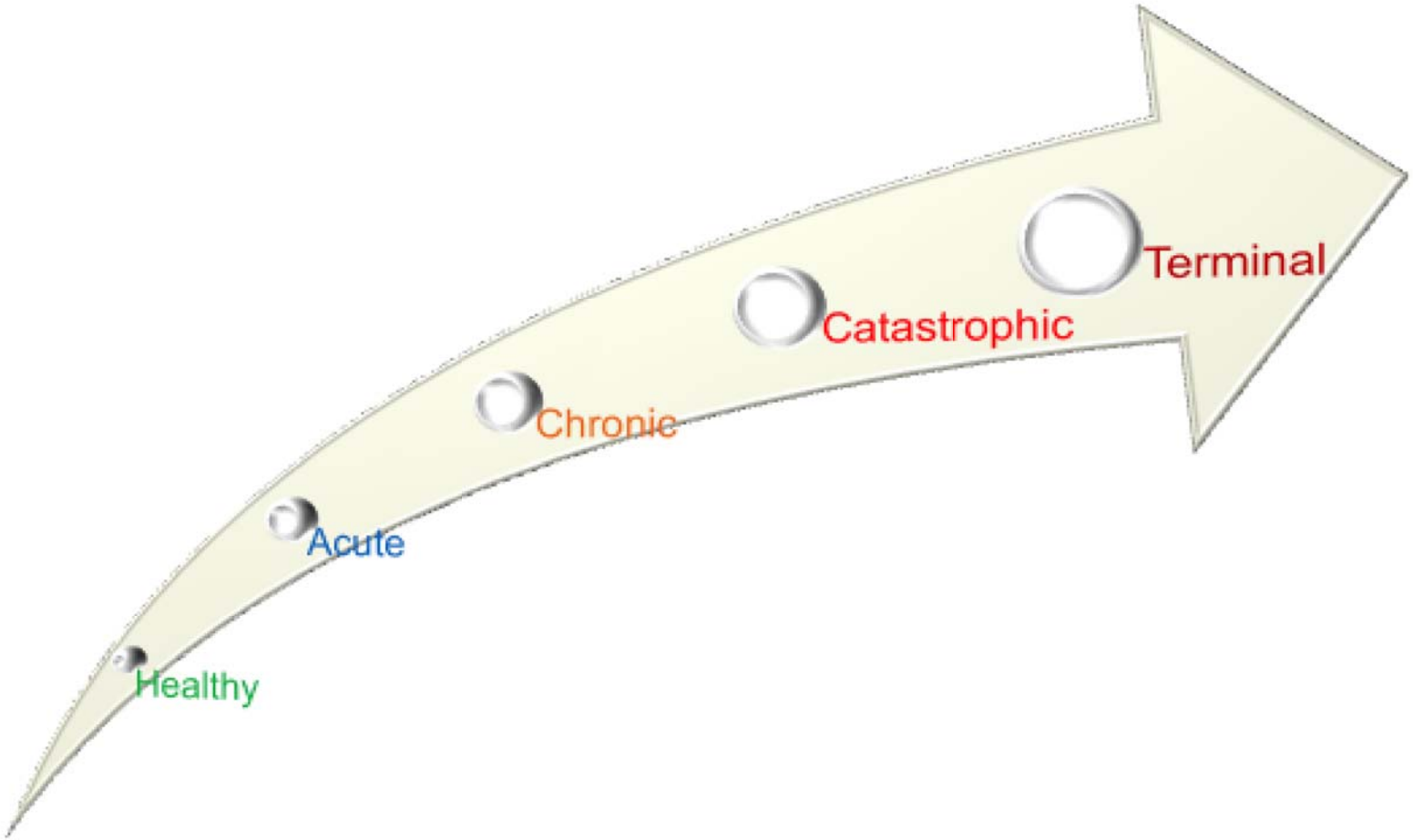
Predictive Modeling Needs

- Digital Infrastructure
- Digital Interoperability
- Digital Velocity (real-time)
- Event/Episode Driven Models
- Tele-monitoring
- Social Determinants
- Consumer Driven Data

Population Health Management

- Analyze predictive modeling data to describe population and identify opportunities
- All LOBs and all payors
- Consult with case management teams
- Segment population using attributes describing a wide range of medical, behavioral, and social determinants
- Identify groups of potentially impactable patients

Population Health Management



Patient Attributes

- Conditions and comorbidities – both physical and behavioral
- Relative risk for predicted future cost and use
- Overall cost of care risk model
- Probability of an IP stay (UM history)
- Prior use of acute care, including IP, ED, readmissions
- Gaps in care relative to quality measures
- Strength of patient-physician relationship

Risk Stratification

Category	Criteria
1: Healthy	Low risk, without Chronic dx, gaps, ER/IP (last 12 mos).
2: Acute (IP or ER)	Without Chronic dx, with 1+ ER/IP – e.g. NICU, High Risk Pregnancy, Fertility Treatment
3: No Chronics: Close Gaps/Reduce Risk	Without Chronic dx (all others), Some gaps or moderate risk
4a: Chronic Big 5: Stable	Diabetes, CHF, CAD, COPD/Asthma , moderate risk, limited gaps, without ER/IP
4b: Behavioral Health Only: Stable	BH, without other chronic conditions, moderate risk, limited gaps, without ER/IP
4c: Chronic Other: Stable	Chronic dx (excluding Big 5), moderate risk, limited gaps, without ER/IP
5a: Chronic Big 5: Interventional	Diabetes, CHF, CAD, COPD, Asthma, with higher risk or gaps or ER/IP
5b: BH Only: Interventional	BH dx only, with gaps or ER/IP or higher risk
5c: Chronic Other: Interventional	Chronic dx (excluding Big 5), with gaps or ER/IP or higher risk

Risk Stratification

Category	Criteria
6: Chronic High Risk	Significant risk: Cost risk >15 (seniors), >10 (adult/peds) OR IP probability risk >50% or PRG risk >10
7: Rare High Cost Condition	CF, MS, ALS, Gaucher's, Parkinson's, Myasthenia Gravis, RA, Lupus, Sickle Cell, Hemophilia, Dermatomyositis, Polymyositis, Scleroderma
8a: Catastrophic: Active Cancer	Cancer with active treatment (chemo, radiation, etc.)
8b: Catastrophic: Transplant	Solid organ and soft tissue
8c: Catastrophic: Dialysis	Hemo- or peritoneal dialysis
9: Dementia	Dementia
10: Terminal (EOL)	Hospice or metastatic cancer

Prevalence Snapshot

Health Continuum Category	Member Count	% of Members	Prior Cost %	Prior Cost PMPY	Avg Risk, Costs	Avg Risk, Inpt
1: Healthy	**314,600**	57.2%	15.0%	$ 965	0.526	1.9%
2: Acute (IP or ER)	**14,300**	2.6%	12.3%	17,452	1.208	3.1%
3: No Chronics - Gaps/Reduce Risk	**73,150**	13.3%	8.5%	2,357	1.231	3.1%
4b: BH Only: Stable	**26,950**	4.9%	4.0%	2,965	1.322	3.4%
4c: Chronic Other: Stable	**43,450**	7.9%	6.3%	2,933	1.362	3.6%
5b: BH Only: Interventional	**19,800**	3.6%	8.6%	8,798	2.825	7.6%
5c: Chronic Other: Interventional	**46,750**	8.5%	24.0%	10,386	3.226	8.3%
6: Chronic High Risk	**3,850**	0.70%	7.8%	40,990	9.402	26.0%
7: Rare High Cost Condition	**2,750**	0.50%	3.6%	26,836	5.915	11.1%
8a: Catastrophic: Dialysis	**110**	0.02%	0.7%	136,786	30.81	36.7%
8b: Catastrophic: Active Cancer	**2750**	0.50%	6.8%	50,384	10.58	13.8%
8c: Catastrophic: Transplant	**275**	0.05%	0.7%	54,888	10.57	19.1%
9: Dementia	**825**	0.15%	0.6%	14,094	5.858	17.9%
10: Terminal (EOL)	**440**	0.08%	0.9%	41,802	16.11	22.9%

Patient Segmentation

Patient Segmentation

Risk Stratification Suggestions

- Standard Stratification of Big 5: CHF, CAD, COPD, Asthma, DM
- Advanced Illness Management
- Pre-catastrophic Disease States: Pre-dialysis Stage 4/5
- Drug safety issues (Integrated with Laboratory Values)
- Social Determinants of Health, Functional Status, Caregiver Status, Social Isolation, Transportation or Financial Devastation
- Moderate ER and Limited/No Provider Relationship
- Moderate Med Adherence Issues and Limited/No Provider Relationship
- Multiple Chronic Conditions: Co-morbid Medical and Behavioral Health
- Movers: Future Cost $35,000 higher than Prior Cost

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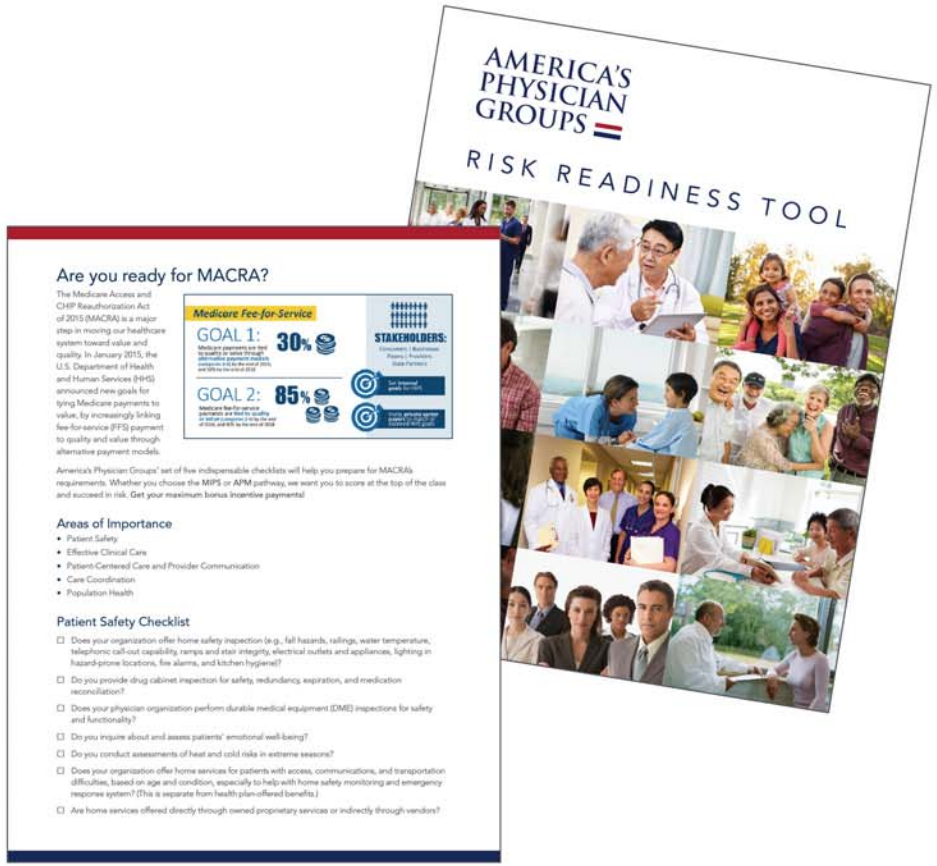
APG Risk Readiness Tool

Hands-on tool to assess your readiness for APMs

Essential, specific checklists for:

- patient safety
- effective clinical care
- patient-centered care and provider communication
- care coordination
- population health

Available for download at www.apg.org/risktool



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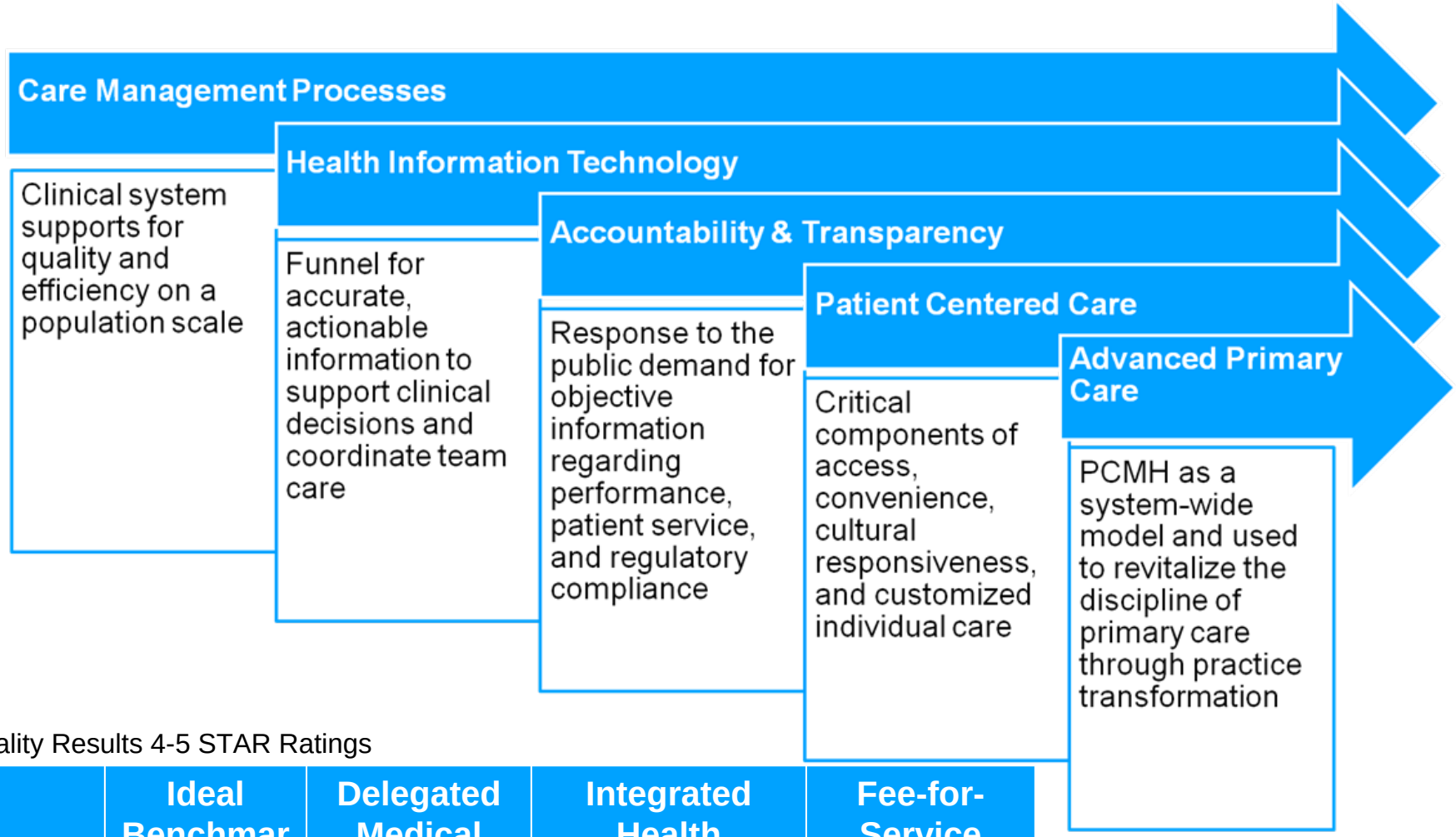
What is SOE®?

- Voluntary, self-assessed and web-based survey for APG's members to capture attributes of the coordinated model of care at the physician organization level
- Blueprint for assessing the tools and processes APG members have in place to meet the increasing expectations of patients and healthcare payers
- Roadmap for APG members for development priorities within their organizations
- This is our 12th year of SOE®, propelling our members on the national platform with the trademark of Excellence as they improve the personal health experience for nearly 17 million patients

Delegated Model of Coordinated Care



IHA Quality Results 4-5 STAR Ratings

	Ideal Benchmark	Delegated Medical Groups	Integrated Health Systems	Fee-for-Service
Admits/K	180/K	190-210/K	220-250/K	250-300/K
Bed Days/K	650/K	700-725/K	725-850/K	1,110/K
Re-	3%	5%	6-9%	20%

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Care Coordination Definition

Care Coordination

The deliberate organization of patient care activities between two or more participants involved in a patient's care to facilitate the appropriate delivery of health care services.

Care Coordination

- **Care Transition**
  - **Palliative Care –** Metastatic cancer and age >=85 and no hospice
  - **Multiple Providers** – seen by 15+ provider groups in last 12 mos
  - **Gap in Follow-up** after select discharges (based on select EBM measures)

- **Complex Conditions or Treatments**
  - **5+ Chronic conditions and No or Limited Provider Relationship**
  - **10+ Chronic Conditions**
  - **SMI and Chronic Conditions –** schizophrenia, bipolar or major depressive disorder and 5+ chronic physical conditions
  - **Pediatrics - BH Condition** (excluding ADHD) and 5+ physical chronic conditions
  - **Poly-pharmacy –** 15+ distinct maintenance drug classes in the last 120 days

- **Emerging Risk**
  - **Pre-dialysis –** ESRD and not on dialysis
  - **Drug Safety –** 1+ EBM (evidence based medicine) drug/drug or drug/disease care alerts and no/limited provider relationship
  - **Emerging Costs -** Predicted > Prior Total Cost by $25,000 or More
  - **New Onset of 3+ Chronic Conditions –** no evidence of any chronic episodes in 2 prior years and 3+ chronic episodes in last 12 mos for members enrolled 36+ months

Care Coordination

- **Ambulatory Care Concerns**
  - **High ER Utilization -** 8+ ER visits in the last 12 months
  - **Moderate ER Utilization –** 3+ ER visits and no/limited provider relationship
  - **Pediatric Asthma –** and 3+ IP/ER Visits in last 12 mos
  - **Office Visits –** 30+ in last 12 mos excluding preventive care
  - **Risk Events** - 5+ IP, ER or cluster markers from predictive risk model
  - **PQI –** 2+ ambulatory sensitive care inpatient stays based on AHRQ PQI measures

- **Member Engagement**
  - **High Medication Adherence Gaps –** 5+ medication adherence gaps
  - **Moderate Medication Adherence Gaps –** 2+ med adherence gaps and no/limited prov relation
  - **Prior Chronic Episodes –** 5+ in prior 2 years and no evidence of any in last 12 months
  - **Rx Only ETGs –** 5+ in last 12 mos (with no evidence of a physician claim for these diagnoses)

Questions

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