Be Careful What You Ask For – A Predictive Model That Really Works

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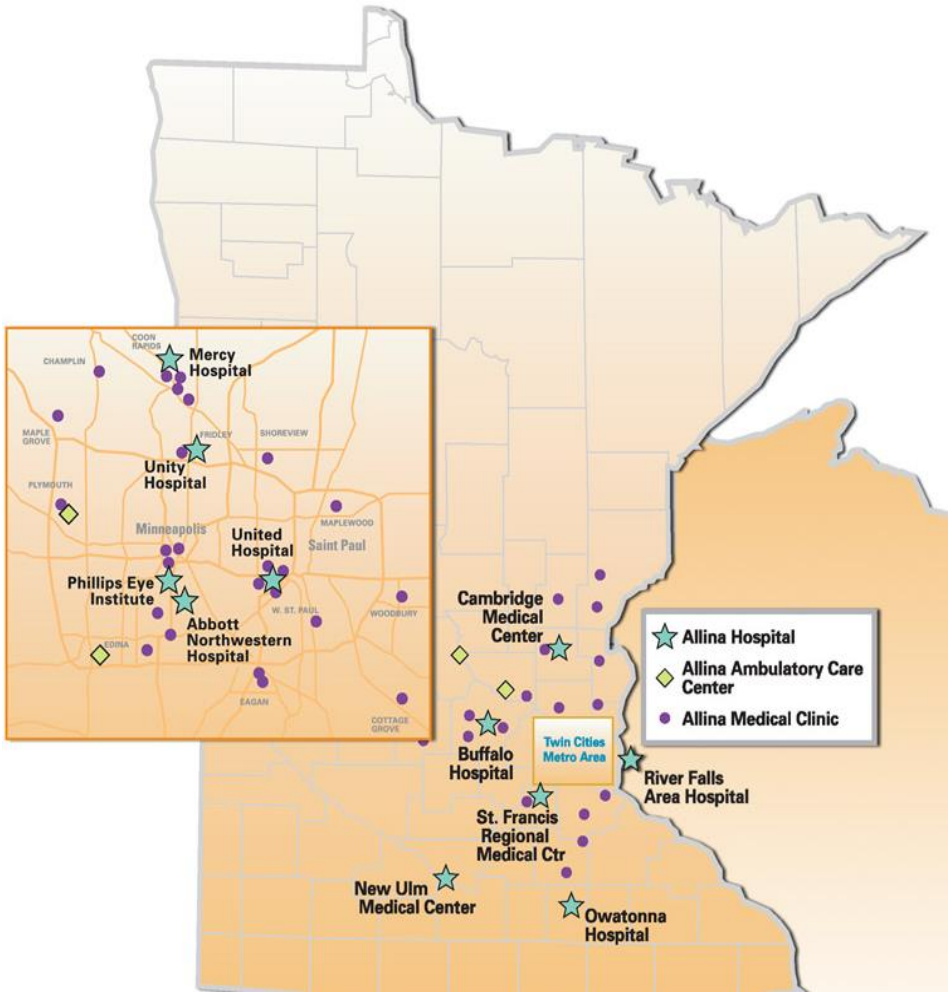
Agenda

- An introduction to Allina Health
- A review of our predictive tools
- How we used predictive data to improve care
- What happened – our results
- Key learnings
- Next steps

Hello from Minnesota

About Allina Health



- 12 Hospitals
- 64 Allina Health Clinics
- 15 Retail Pharmacy Sites
- Hospice, Home Care, Palliative Care, Medical Equipment, Transportation
- 933 Providers
- 26,405 Employees
- 112,973 Inpatient Hospital Admissions
- 3.3 million Total Clinic Visits
- 63,111 Ambulance Transports

Volume to Value Journey

- 80% of payer arrangements include some form of value payment
- Financial risk is estimated at 3% of Allina Health revenue

We practice in a predominately fee for service market

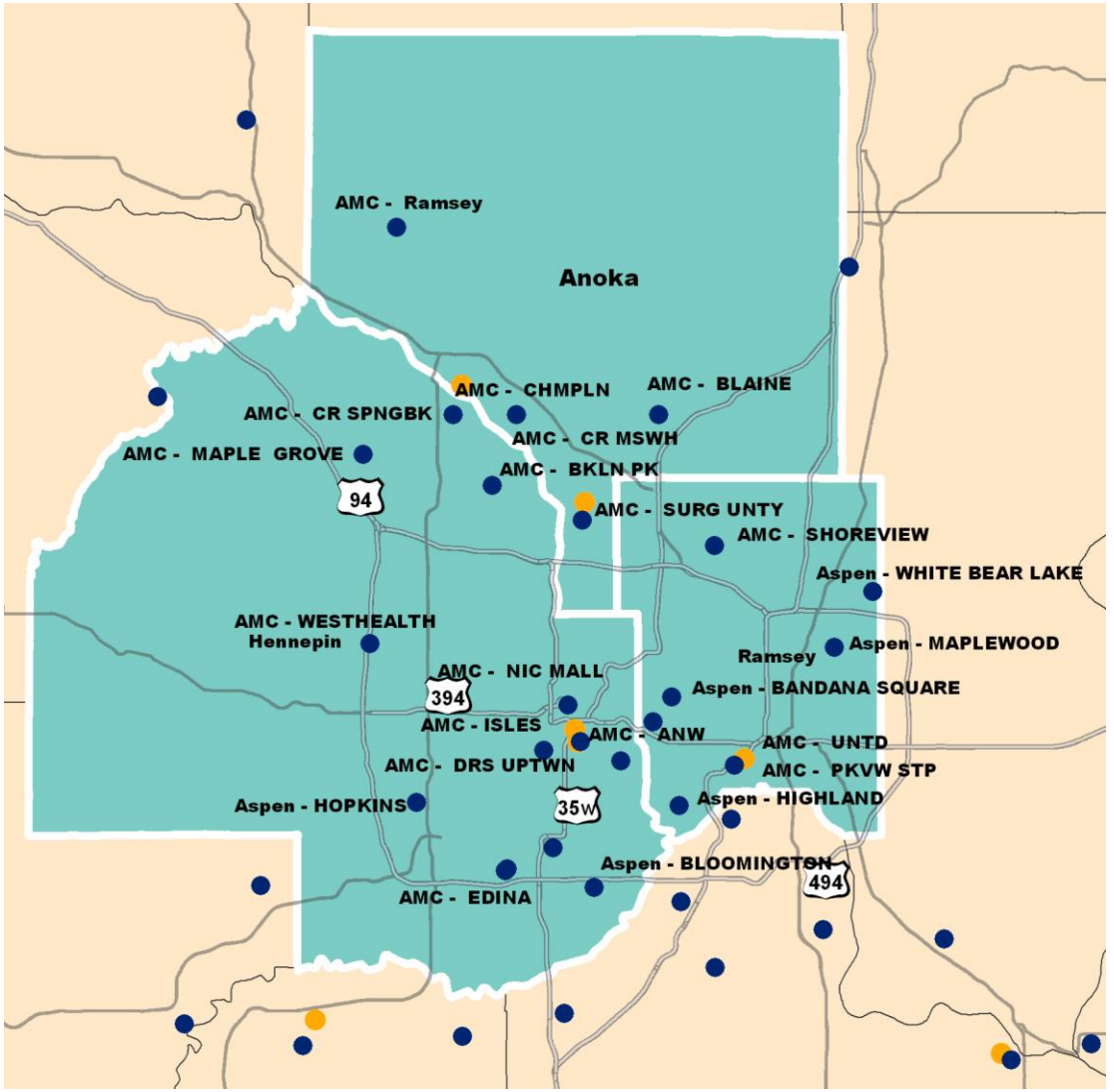
Allina Pioneer ACO Clinics

Allina focused its participants to primary care clinics operating in 3 Counties:

1. Hennepin
2. Anoka
3. Ramsey

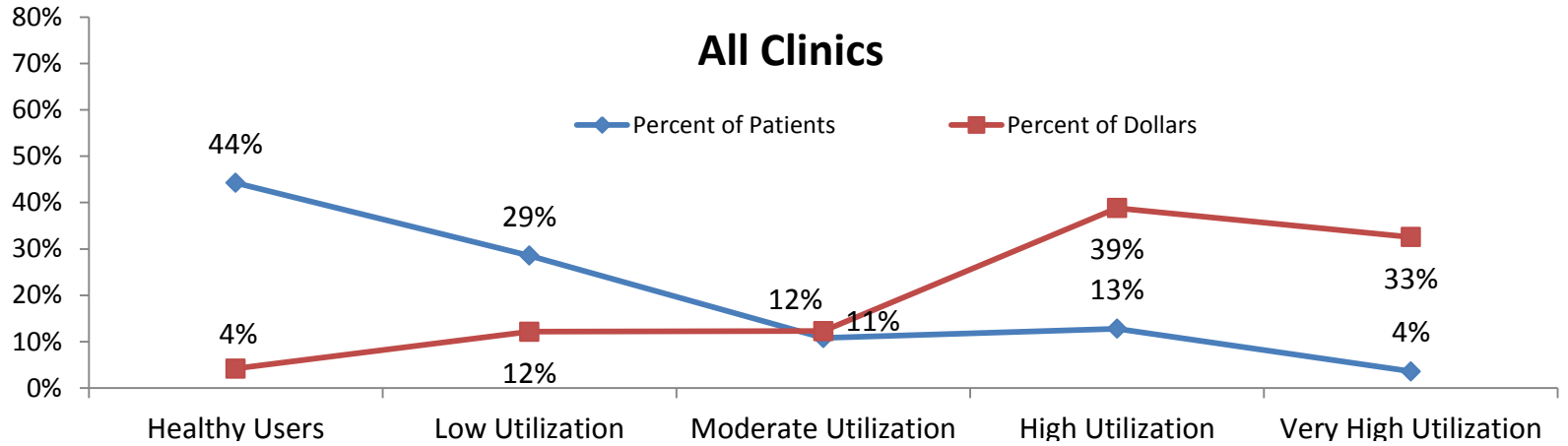
265 Allina Primary Care Providers(MDs, NP/PAs) participating

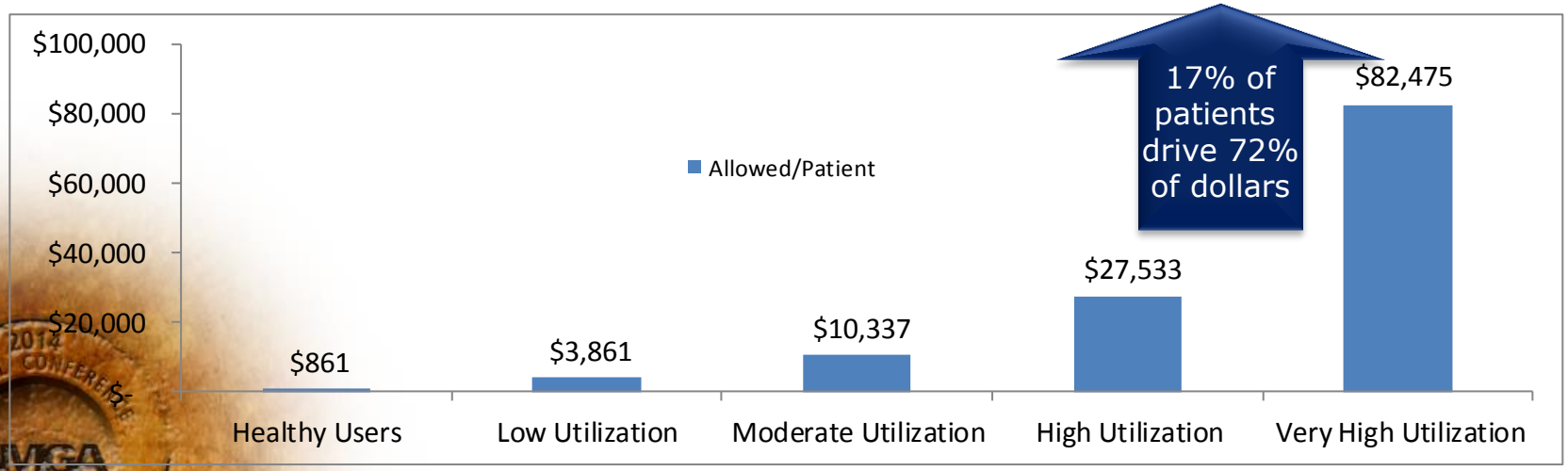
CMS attributed Medicare FFS beneficiary population is ~14,000



What Did We Learn from the Data?

Expenditures follow an expected distribution pattern





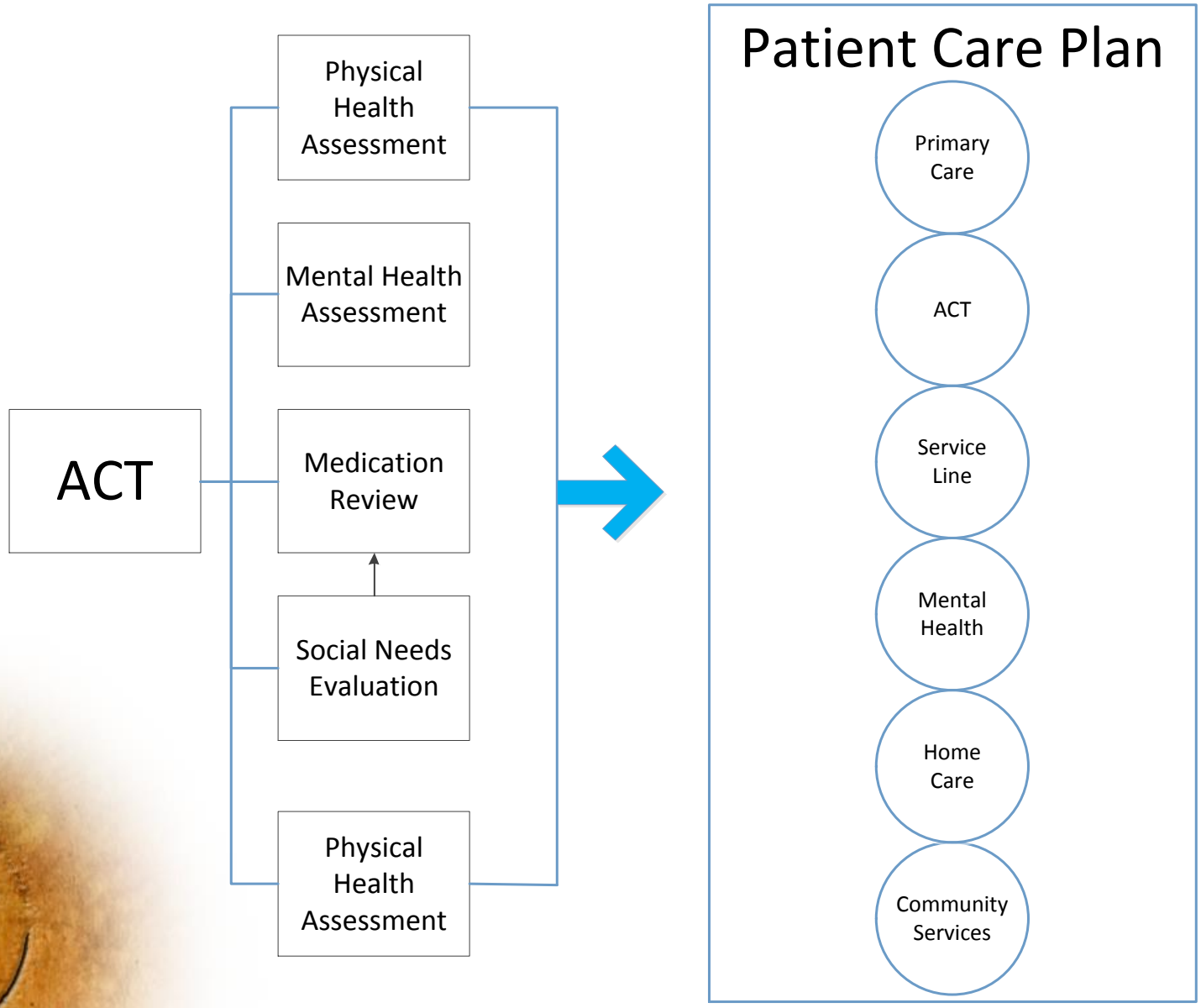
Pioneer

- Preventing adverse outcomes and high cost utilization is critical to our future success.
- Preventing unnecessary ED visits and hospitalizations are key to reducing the Total Cost of Care.
- Identifying patients at risk will allow appropriate allocation of our resources.
- Provide for better patient care.

Advanced Care Teams

An integrated team of health care disciplines, led by the primary care provider and focused on the coordination and care of patients with complex healthcare needs.

ACT Workflow



Early Results

	Medicare Pioneer Patients with Advanced Care Teams	Matched Controls with Standard Care Teams
TCOC	↓ 37%	↓ 20%
Admissions	↓ 70%	↓ 55%
ED visits	↓ 76%	↓ 36%
High tech imaging	↓ 72%	↑ 16%

Regression to the mean

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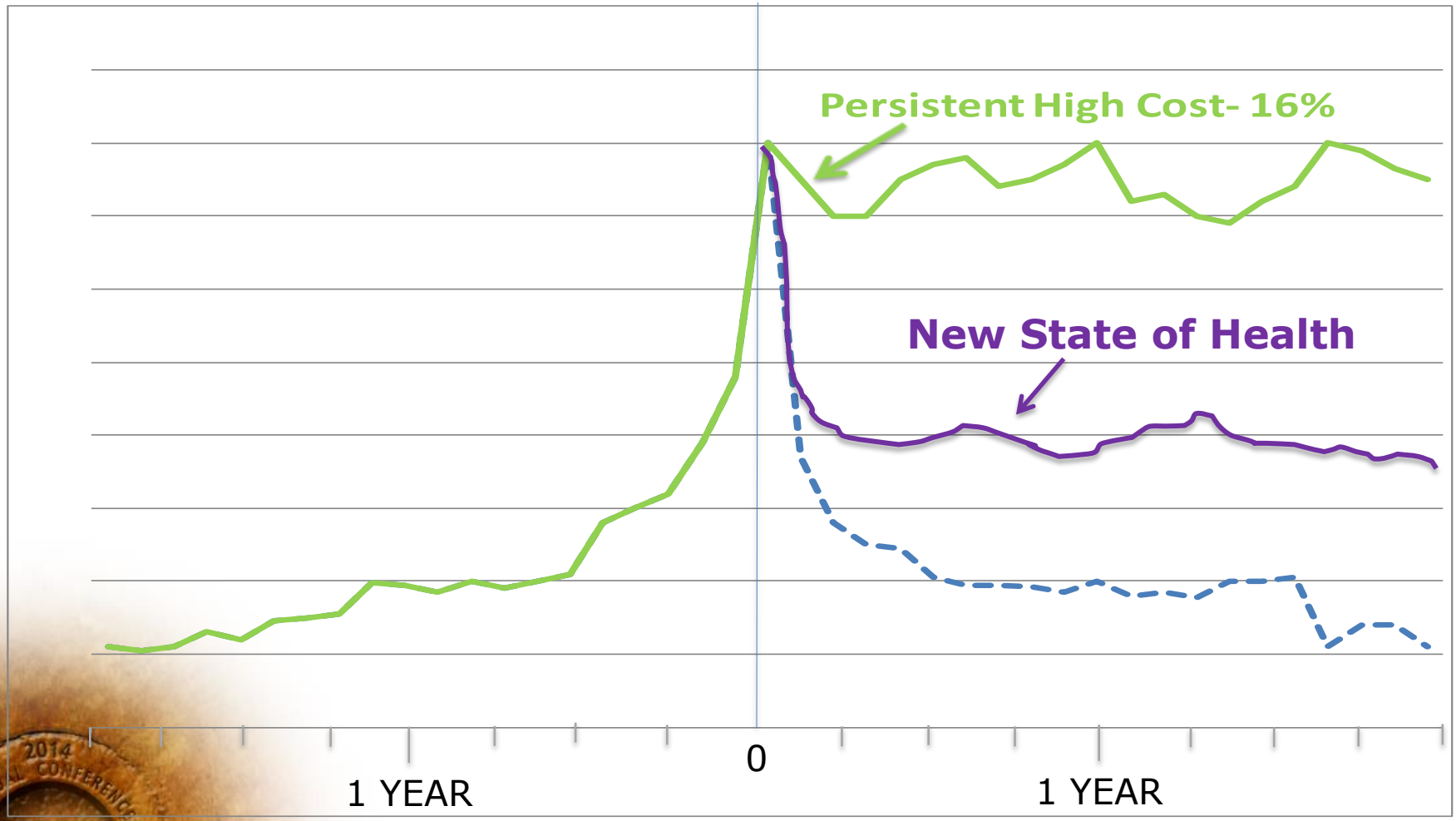
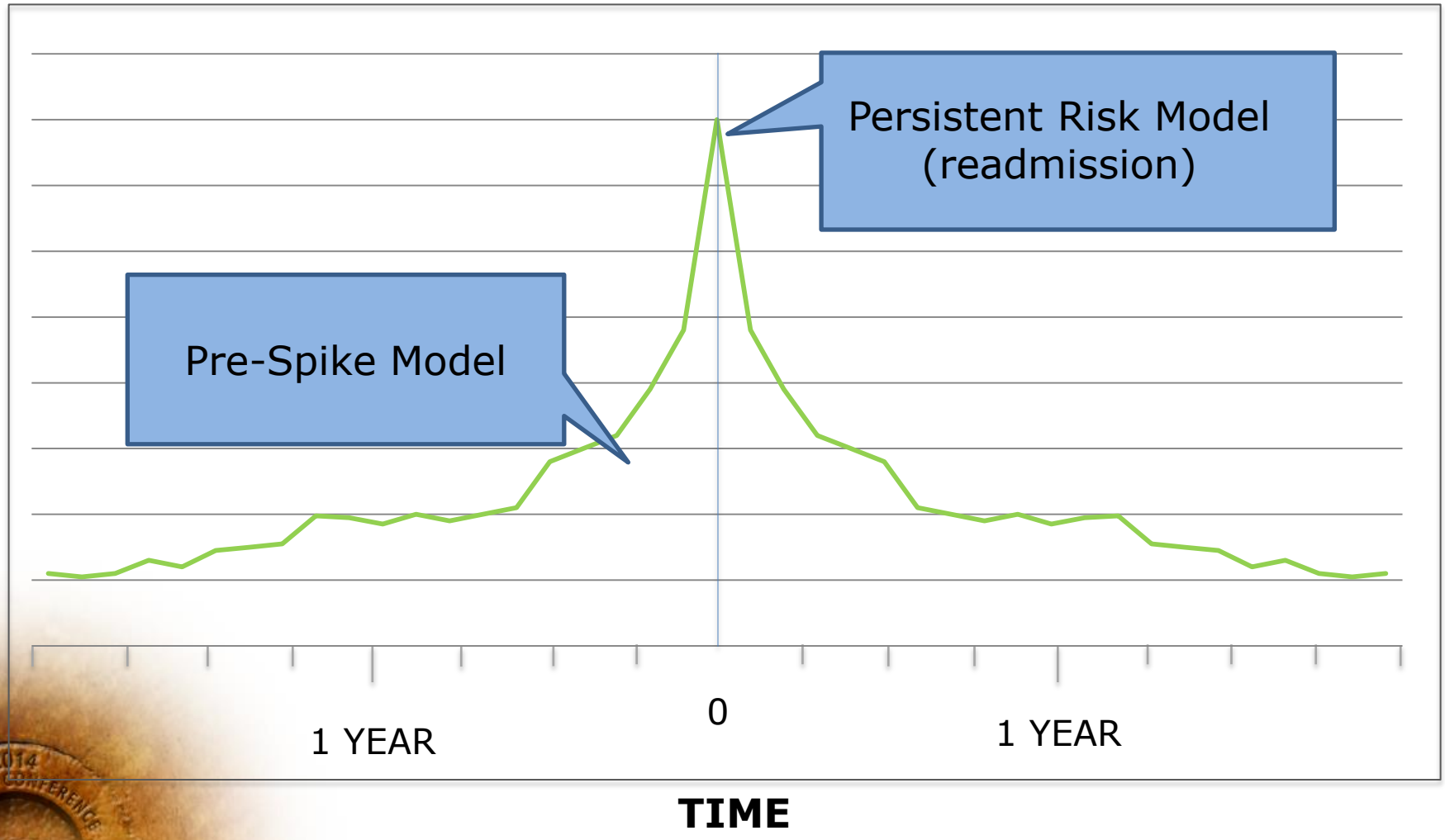
Natural History of High Cost Patients



Ideal Predictive Modeling

- Cost alone is an incomplete predictor of future cost.
- Need to predict persistent risk.
  (e.g. readmission risk model)
- Even better: predict the risk before the spike.

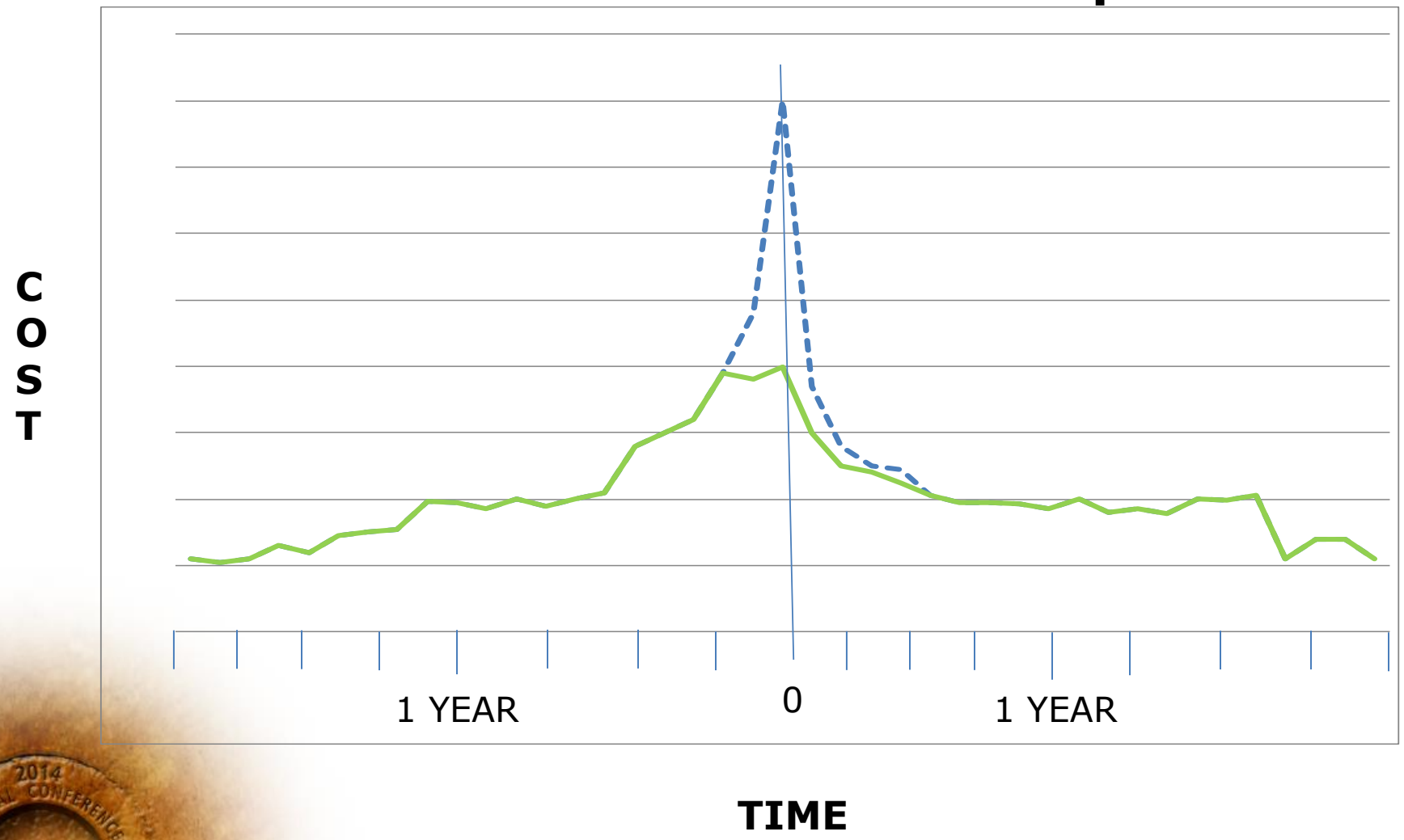
Ideal Predictive Models



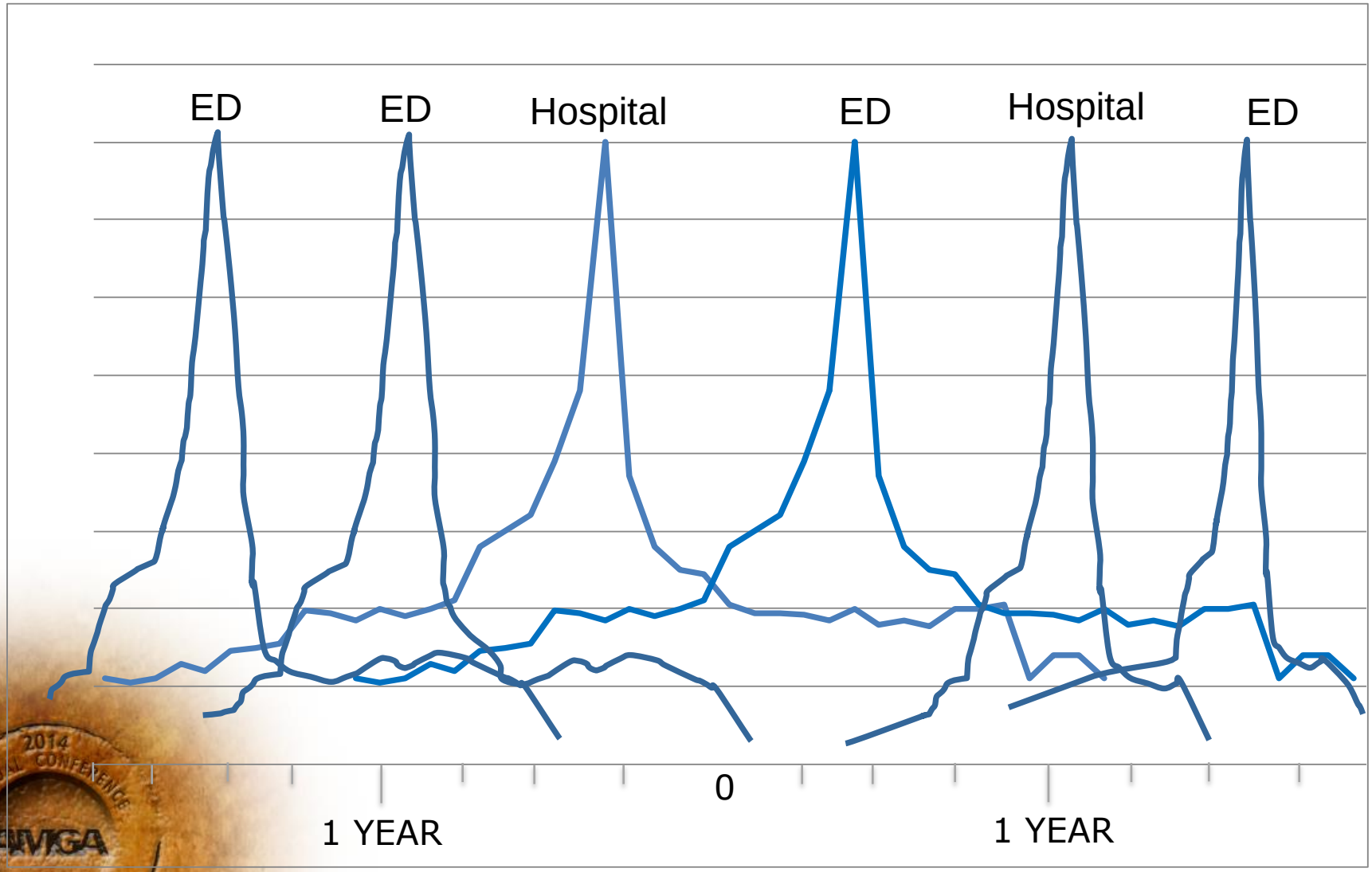
Pre-Spike Predictive Model

- Developed by Allina Health
- Used EMR clinical data, including trends over time
- Regression analysis of thousands of variables
- Patterns were identified to predict an admission or ED visit (an event) in the next year
- Precision of ~0.9
  (90% of those predicted had an event within 1 year)

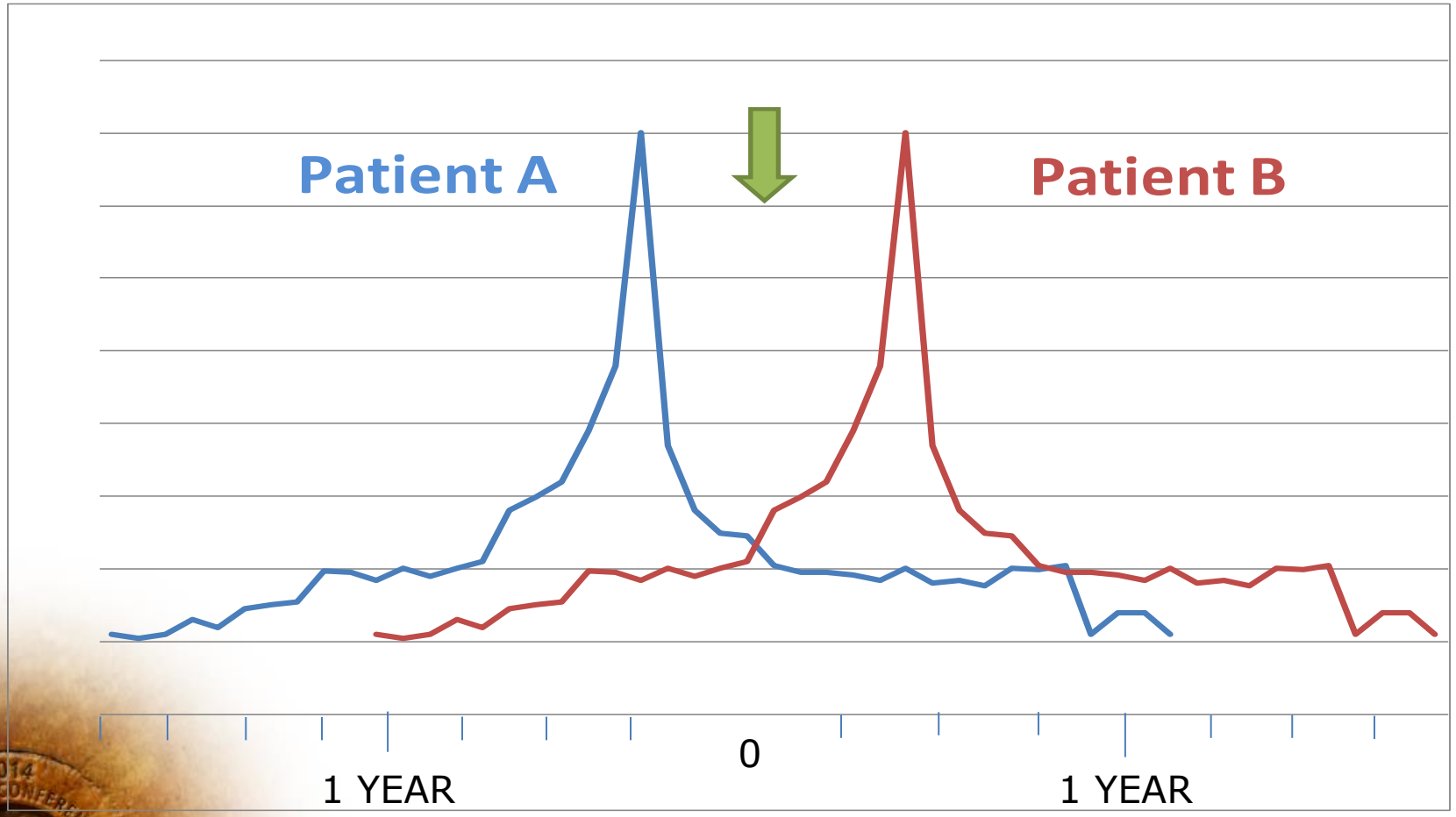
Success: Blunt the Spike



Success: Reduce the Number of Spikes



Who Needs Intervention?



Intervention Plan

- Using the persistent risk model and the pre-spike model, patients were divided into three groups based on the following four categories:

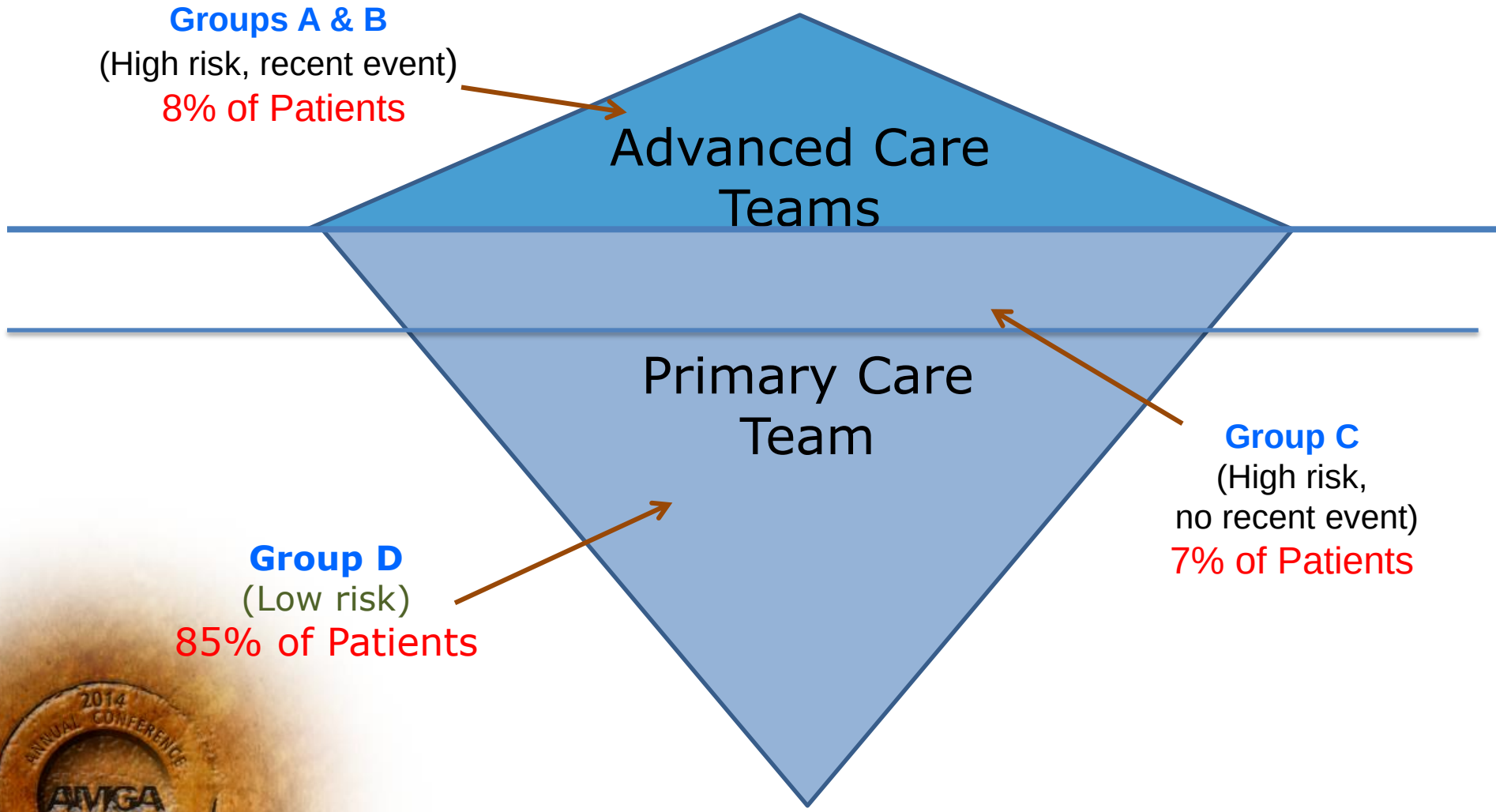
Group A: Patients at increased risk of readmission

Group B: Patients at increased pre-spike risk, and with an event in the last year

Group C: Patients at increased pre-spike risk, but without an event in the last year

Group D: Patients at low risk by both models

Intervention Plan



Challenges of the Pre-Spike Predictive Model

1. **Clinical challenges**

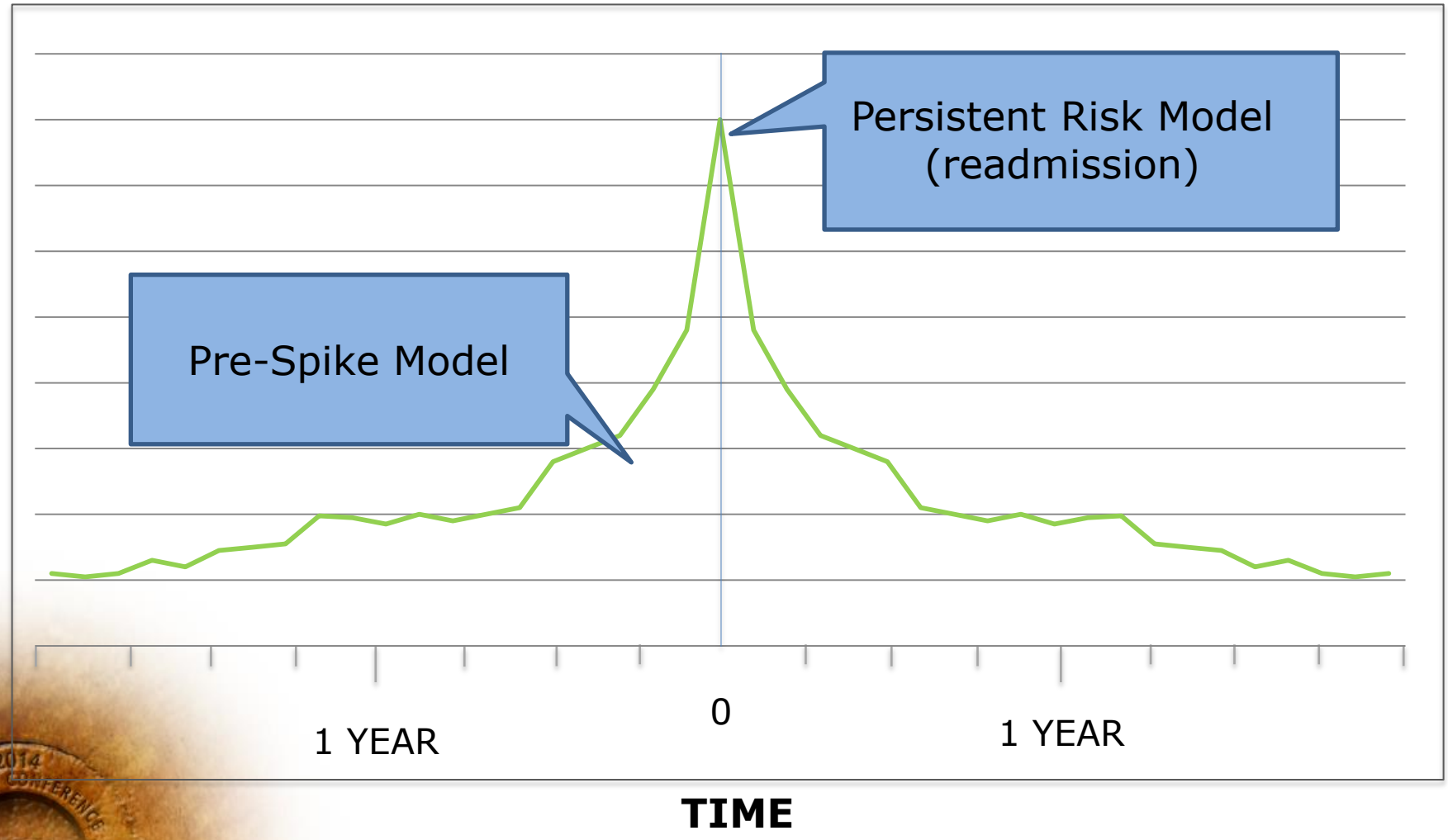
   - Black box to clinicians
   - Reasons for risk are often unclear
   - Pre-spike patients are not eager for increased care
   - Desired interventions are uncertain

Challenges of the Pre-Spike Predictive Model

2. Value analytics challenges

- Model had infrequent data updates
- Model is more precise than sensitive
- Need control group and at least 1 year to show effectiveness of interventions
- Hard to prove the value in pre-spike work
- Lack of payer alignment

Ideal Predictive Models

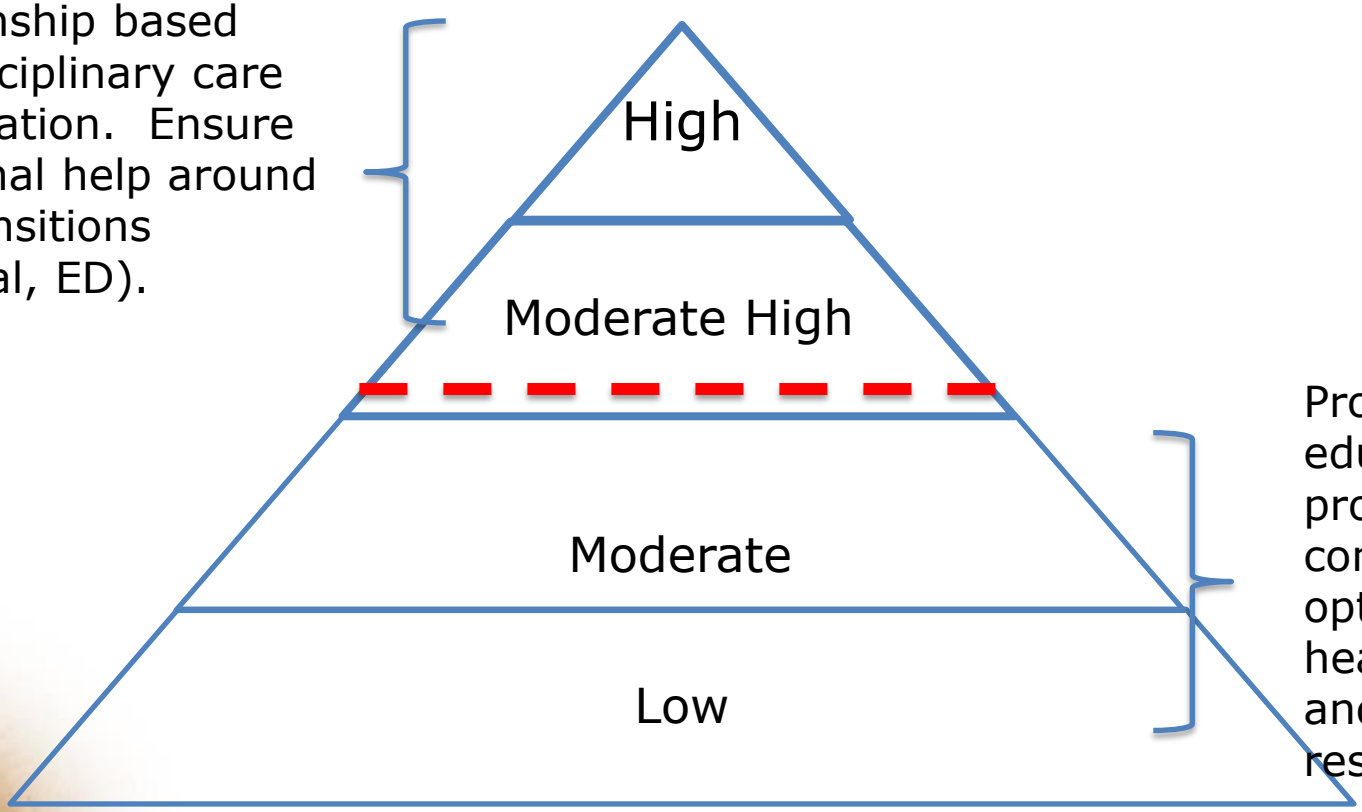


Next Steps

- New strategy
- Reliable and easily understood care models
- Target a population for high cost resources
- Triple aim scorecard to monitor progress
- Rigorous data analytics for TCOC impact
- Expand to larger populations with appropriate funding (PMPM)

Objective:
Segment the Population by Level of Risk with Unique Care Models

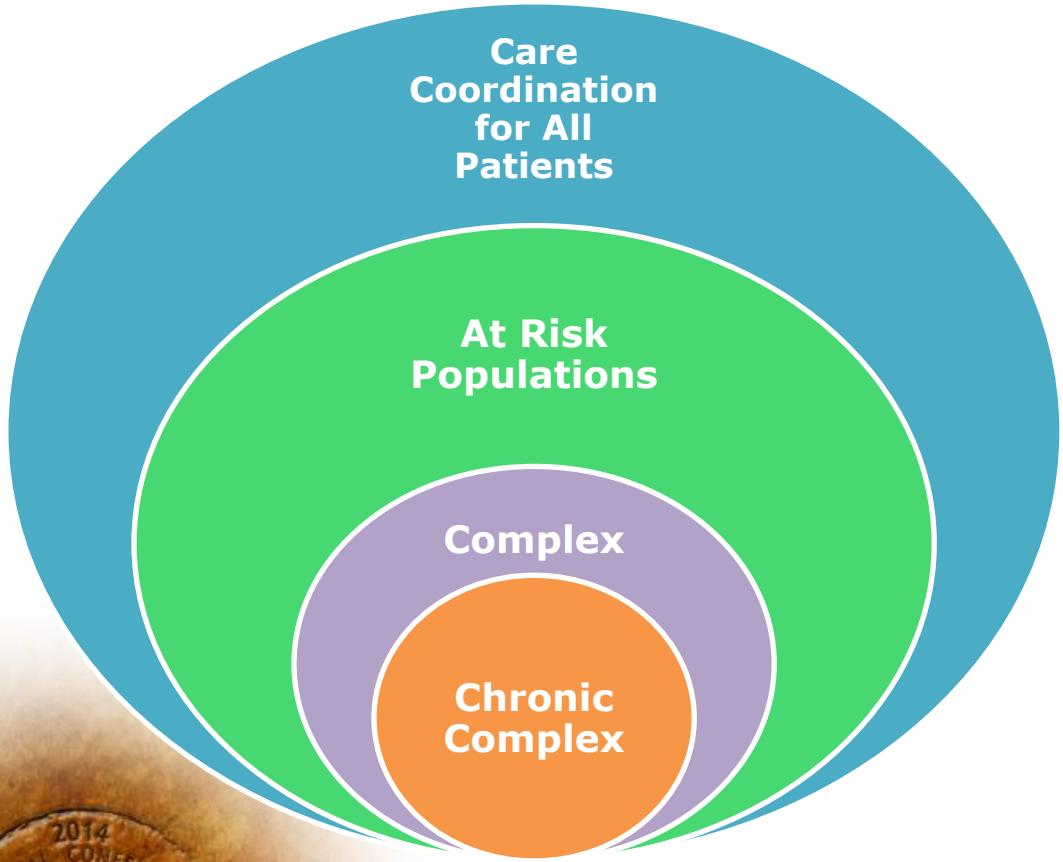
Relationship based interdisciplinary care coordination. Ensure additional help around key transitions (hospital, ED).



Proactively educate & provide convenient options to health care and resources

Allina Health Care Management

Systems of Care to Improve Patient Outcomes



- **Prevention/Wellness**
- **Access to Primary Care**
- **My Chart**
- **Care Navigation**

- **Registries**
- **Screening Tools**
- **Predictive Models**
- **Health Coaches/Care Guides**

- **Primary Care**
- **Advanced Care Team**
- **Specialty Care Coordination(Clinical Service Lines)**
- **Hospital & ED Complex Transitions Team**

- **Complex Care Program**

Allina Health Care Management Programs

Coordinated care by an interdisciplinary team for patients with **complex illness** who need support and resources to manage their self care needs.

Primary Care-	Specialty Care	Hospital & ED Transitions
Advanced **C**are **T**eam	*Disease Expertise ex., Oncology, Mental Health, Heart Failure*	*Episodic*
Relationship based	*In collaboration with Primary Care*	*Complex discharges*
Complex		*Link to resources*
Chronic Disease		

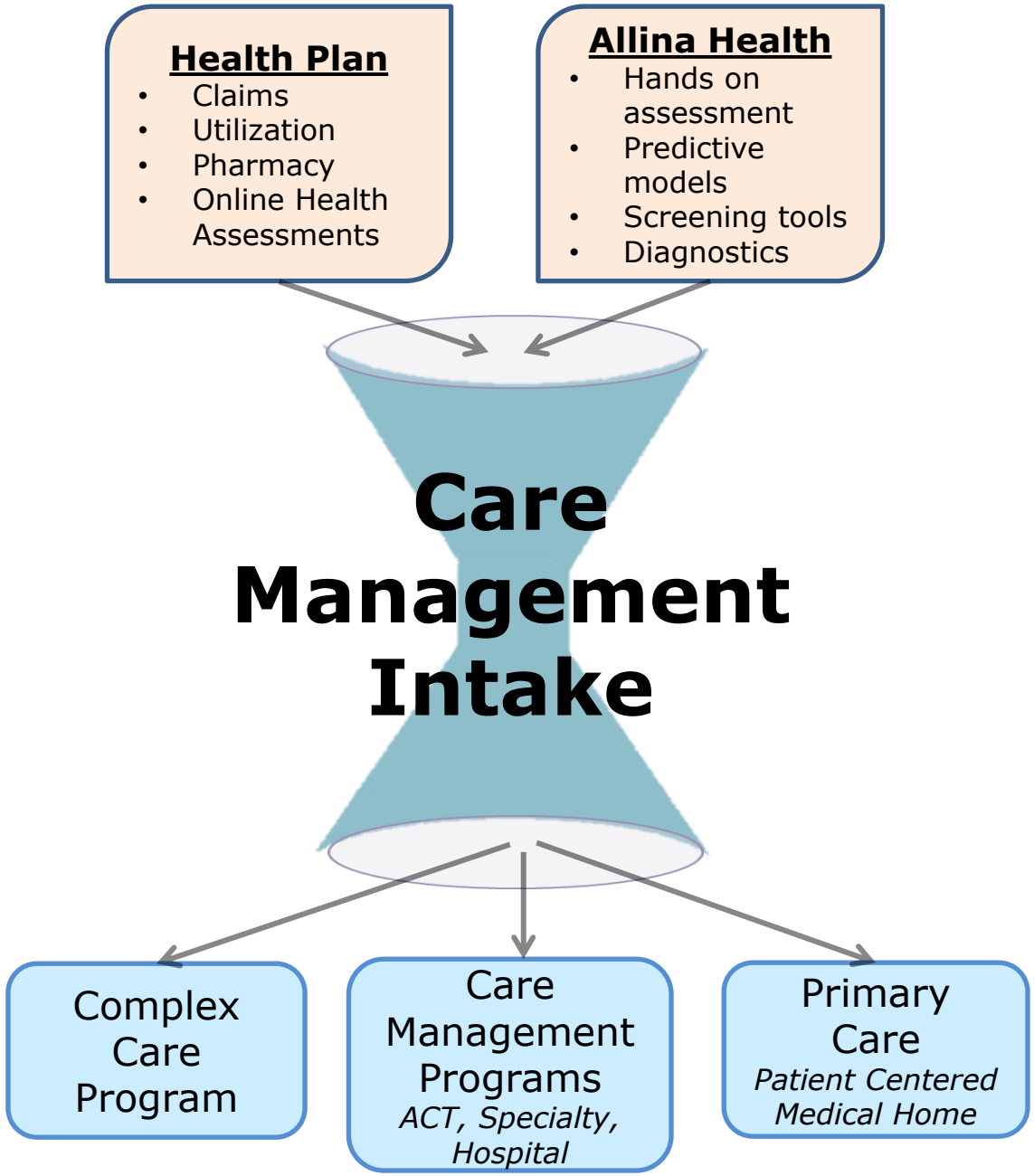
Community Resources: Home Health, Hospice, Skilled Nursing Facilities, housing, county and neighborhood support, faith organizations

Supported by modern technology

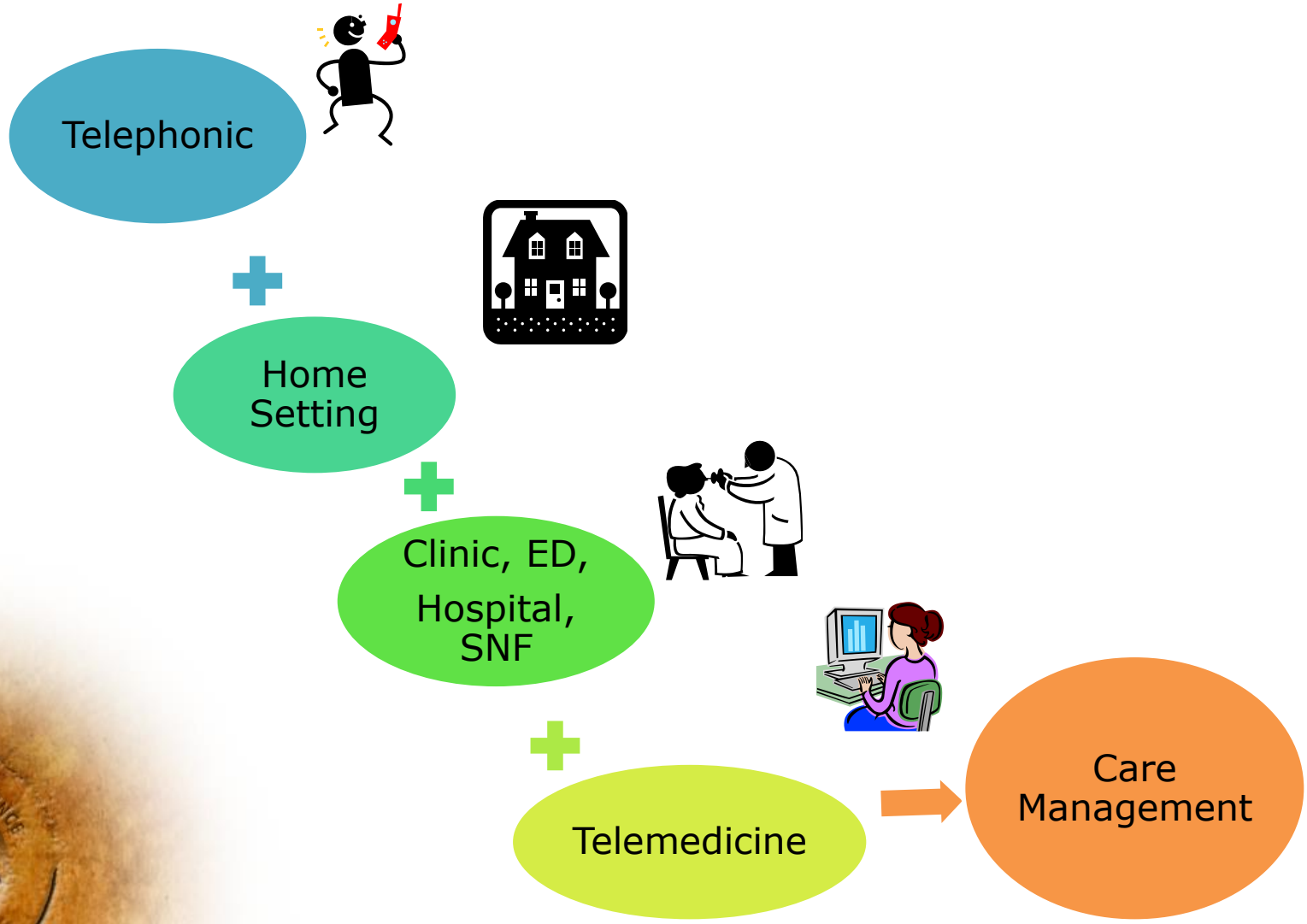
Process Metrics

Triple Aim

Ensuring Strategic Alignment with Resources



Care Management Meets the Patient Where They Are



Care Management Interventions

1. Holistic ***assessment*** (physical, emotional, social, spiritual)
2. Self care ***education***
3. Individualized ***patient centered goals***
4. ***Plan*** for ongoing intervention/interactions
5. ***Financial counseling*** & benefit coordination
6. Follow up ***appointments*** after hospital and ED visits
7. ***Medication management***
8. ***Hospital discharge*** planning to the right level of care
9. ***Referrals*** to Home Health, Palliative Care, Hospice, Community Resources
10. ***Advanced Care Planning***

Care Guide
RN Care Coordinator
Social Worker
Pharmacist

2014 Care Management Measures

Process Metrics

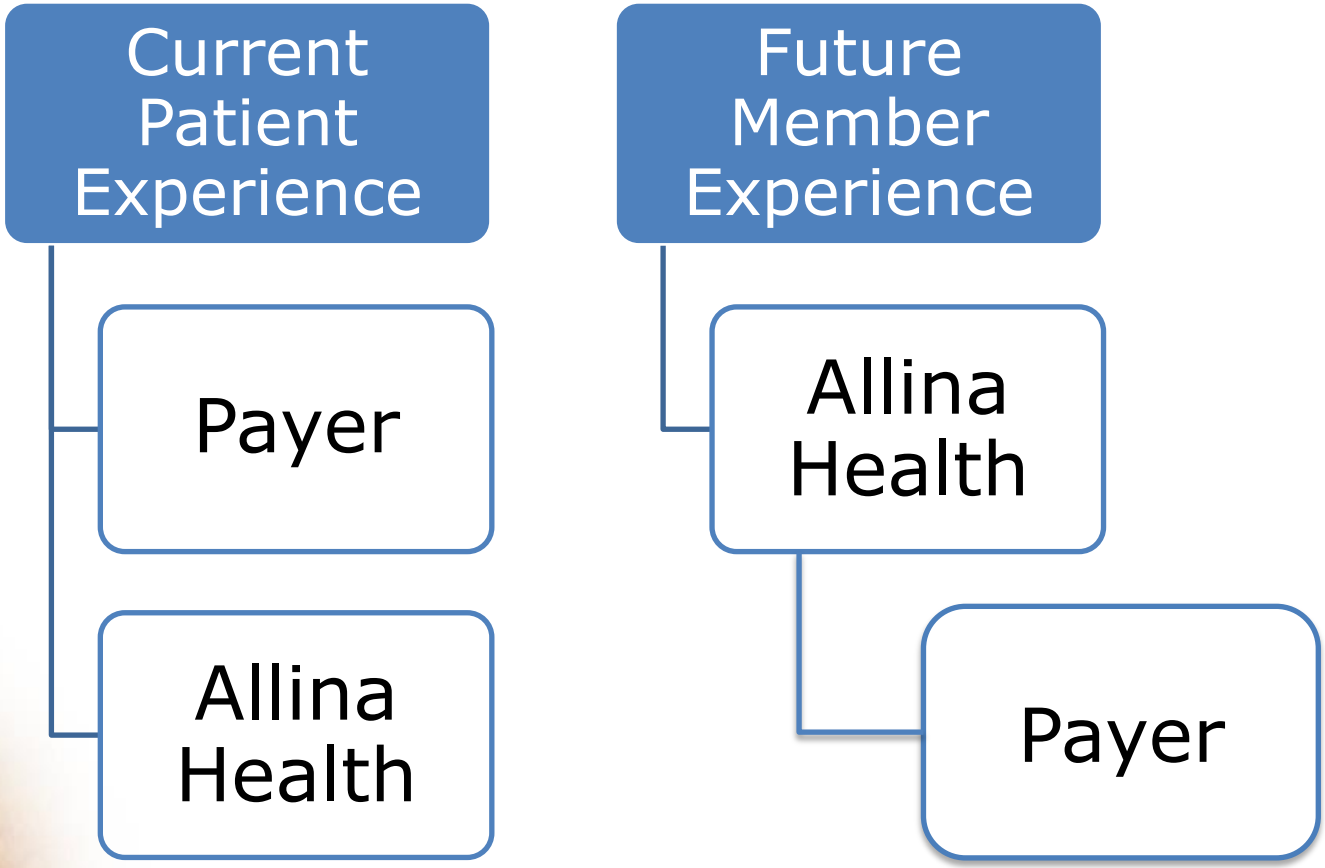
- Enrollment
- 2 process metrics consistent across CM programs:
  - ✓ patient centered goals
  - ✓ medication management
- Patients with Advanced Care Planning
- Patients/family member on MyChart
- Patients with QOL (Promis) complete

Outcome Metrics

- Hospital days/1000 trends
- ED visits
- Preventable trends (PPR, PPC)
- Penetration of ACP and impact on last 6 months in the hospital
- Utilization: Clinic, Home Health, SNF/TCU, Hospice & Palliative Care
- Patient Experience
- Cost measured in Per Member Per Month (PMPM)
- Dollars saved

Care Management Strategy

Eliminate Redundancy, Achieve the Triple Aim & Align Payment



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Questions?