

Predictive Clinical Analytics On the Brink of Change

Predictive Modeling Conference

September 15, 2010

Predictive Analytics – On the Brink of Change

- Shifting focus
- Changing technology and data platforms
- Traditional approach
- Evolving predictive clinical analytics
- Operational characteristics

Market Opportunity

Trends

- **Policy/Reform**
 - Meaningful use
 - Payment reform – ACO/risk
 - MLR floors
 - Mandated coverage
- **Increasing medical cost and utilization**
 - Undesirable variations in quality and outcomes
 - Lack of compliance with EBM
 - Ineffective payment systems
 - Changing Medicine
- **Technology**
 - Availability of electronic clinical data (EMR)
 - Adoption of HIT
 - Spread of HIEs
 - Content and interoperability standards
- **Current program – ROI challenges**
 - Disease and care management
 - ALR
 - Medicaid Case Mgmt

Market Reaction

- **Increasing Role of Providers**
 - Performance, risk and med mgmt responsibility shifting between payers and providers
 - Care coordination
 - Evidence Based Medicine
 - Consumer engagement
 - Practice transformation and Payment Reform
 - Patient centered medical home
 - ACOs
 - Development and implement value based payment systems – bundled payment

Core Problem

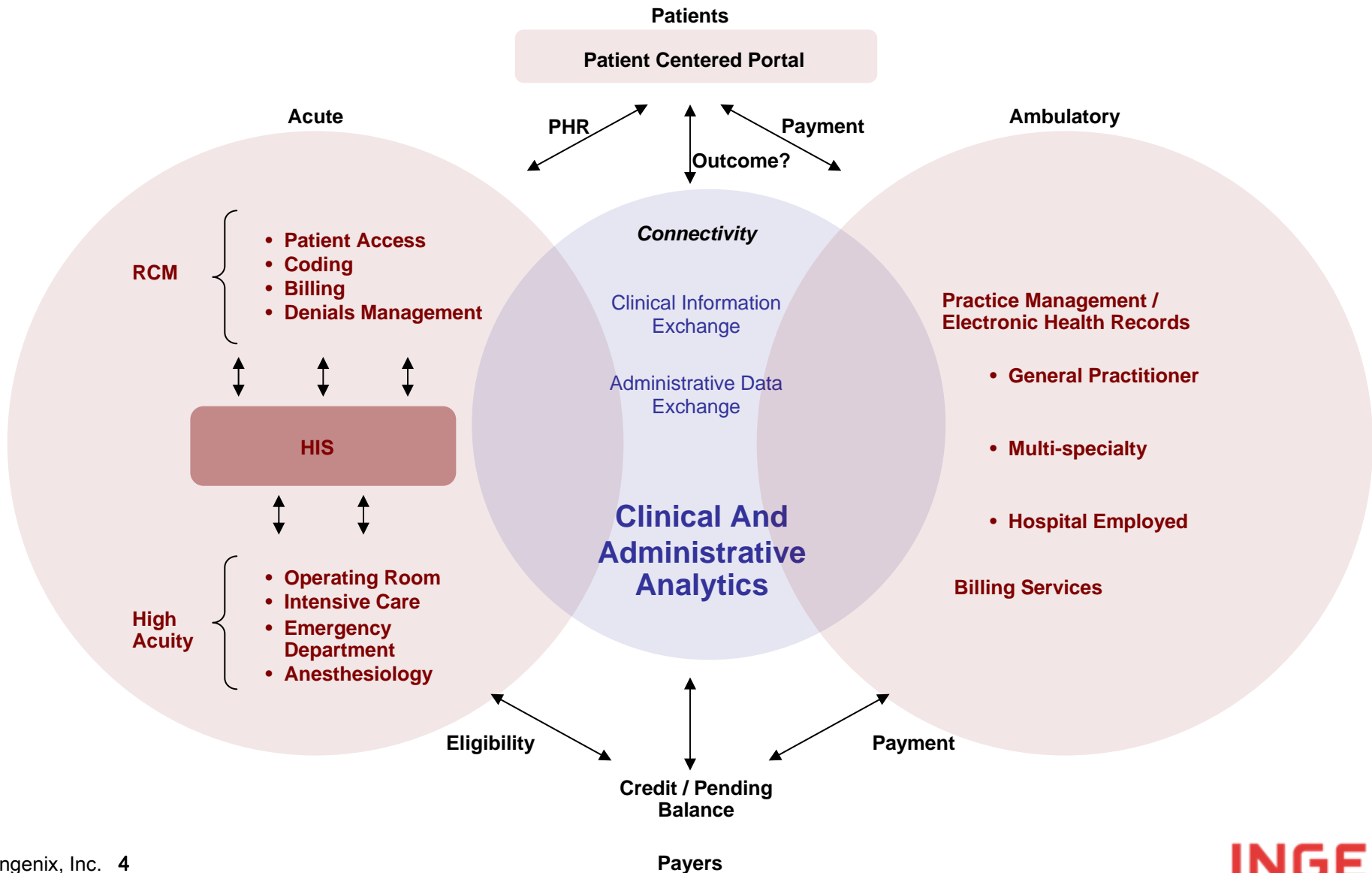
- Health care providers do not have access to timely, actionable and comprehensive patient information to make informed decisions and coordinate care
- With the limited data available health care providers do not have effective tools to:
 - Identify the most clinically relevant information
 - Transform the data in to actionable and comprehensive patient information (analytics)
 - Make that information available to physicians and other health care providers at the point of care

Business Need

- ***Timely, actionable and comprehensive predictive analytics***
- ***Delivered at or near the point of care and integrated in to workflow, at or near***
- ***Coupled with evidenced based care guidelines***
- ***Enabling better informed care decisions and appropriately coordinated care***

This requires dramatic transformation with analytics at the heart.

Future State HIT Infrastructure



Evolving Predictive Analytics in Clinical Analytics

Pre-Clinical Analytics

Clinical Analytics in the Care Setting

Current State

Population based and distant interventions

Disease incidence, progression

Who is likely to develop diabetes?

Prediction of Clinical Outcomes

Predicting and understanding hospital infections

Appropriateness of treatment

Monitoring and mapping course of treatment

Predictive Analytics - Context

Pre-Visit: What care do my scheduled patients need?

Point of Care: What is the best care decision I can make?

Post Visit: Who Needs Urgent Follow Up?

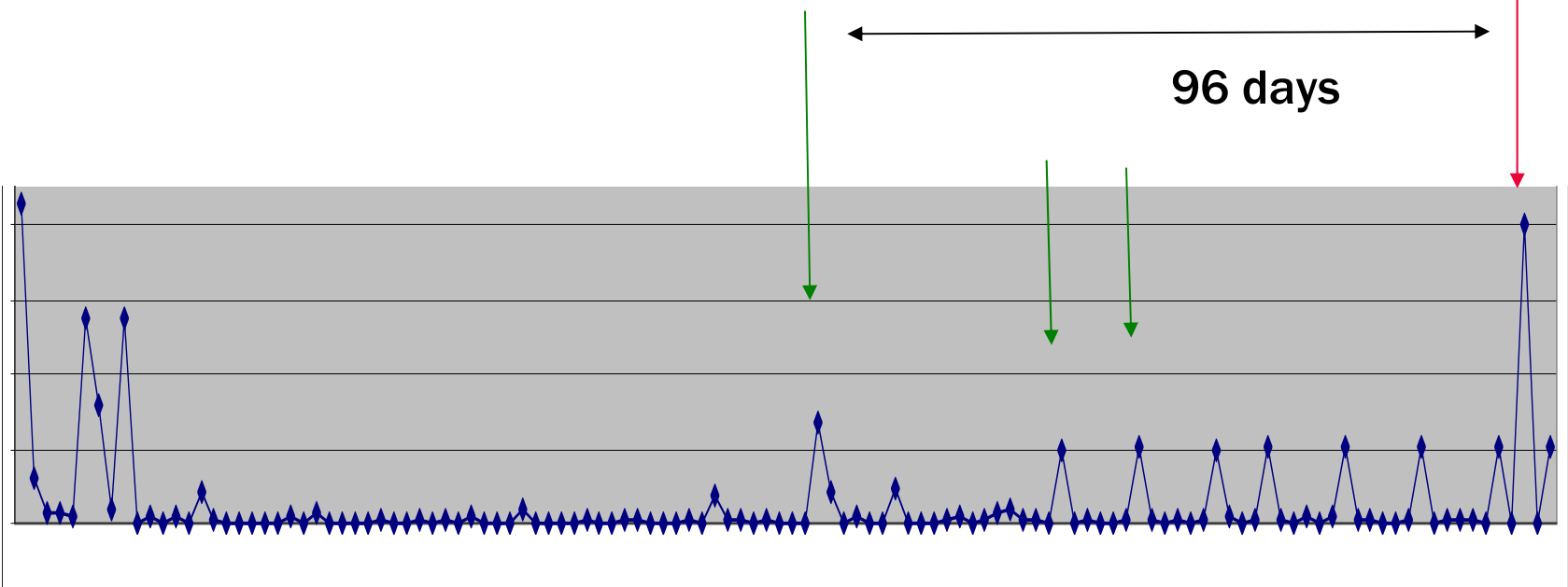
Care Coordination: Which other caregivers need to know this information?

Population: Who in my population needs care and requires outreach?

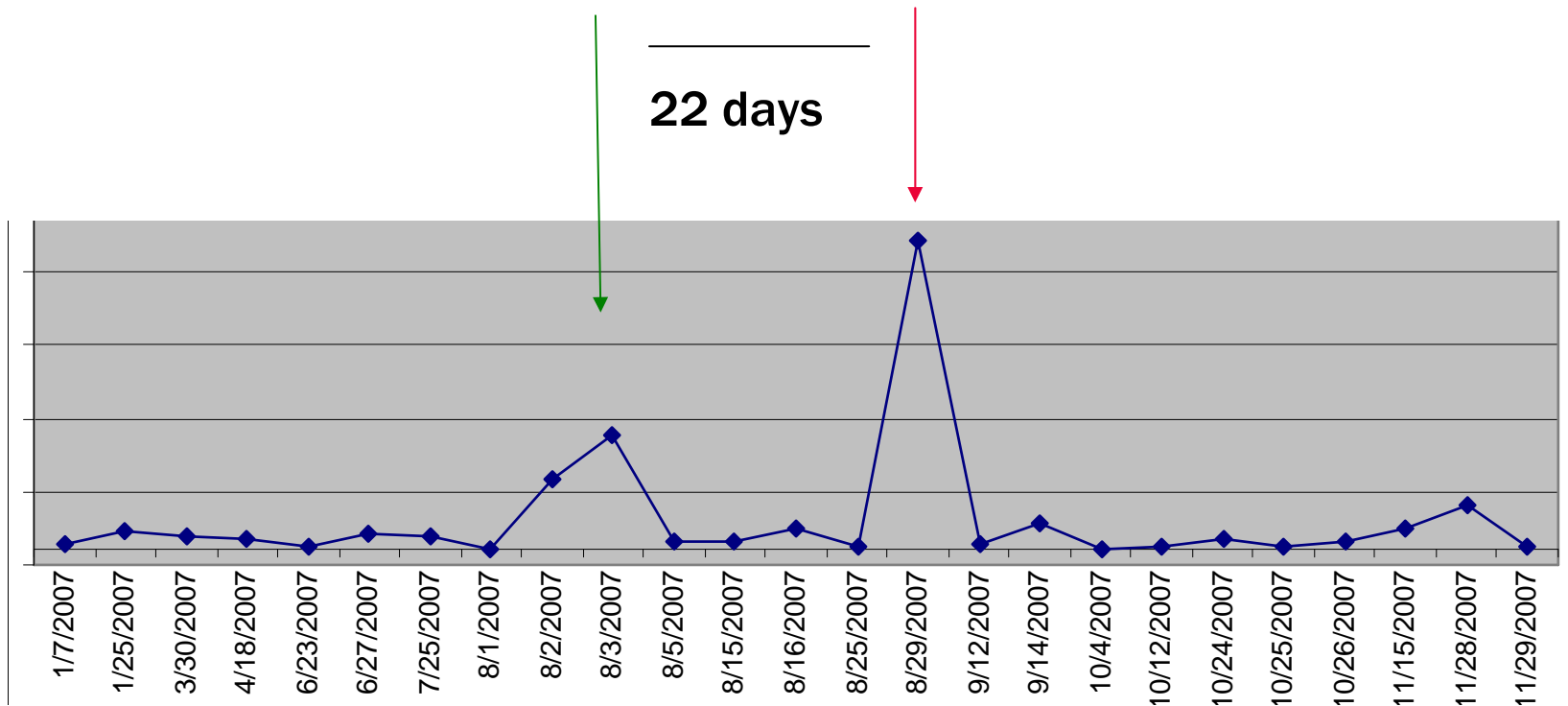
Current State of Predictive Clinical Analytics

- Most workflow tools have no clinical analytical capabilities
- A majority of existing predictive models heavily relies on admin data
- Health plan centric
- Designed for distant interventions
- Too blunt
- Interruptive
- Not integrated in to work flow

Missed Opportunity – High risk person



Missed Opportunity – Relatively Healthy Person



Operational Characteristics of New Generation of Predictive Analytics

- Data agnostic
 - Clinical, administrative and others
- Real time
 - Real time and near real time
- Incremental
 - Data
 - Analytics
- Contextual
 - Relevant to user
 - Relevant to the encounter
- Integrated in to work flow
 - Delivered via existing workflow tools

Natural History of Disease