Modeling Team-Based Primary Care using Computer Simulation

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Steering Committee

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Outline

1. Project Rationale

2. Simulation Modeling Parameters:
   - Analysis Unit: one primary care clinic
   - Resolution: by day of week and by hour
   - Inputs: healthcare demand characteristics
   - Outputs: clinic supply of healthcare personnel
   - Extras: outcomes, measures, financials, animation

3. Business Processes

4. Your Thoughts
Project Rationale

- Create Simulation: Nov 2014 – Mar 2015
- Pilot at One Clinic (FM): April – June 2015
- Implement in 10 Clinics: April – Dec 2015
Phase II Clinical Transformation

- Applying Team-Based Care Concepts
- Team-Based Care = what market demands
- Effective team $\rightarrow$ successful transformation
- Requires practice and personal changes
- Involves clinical teams, leadership, patients
- Partial alignment with NCQA’s PCMH # 2:

  Team | Navigation | Integration | After-Hour Education | Self-Management | Advice | Roles and Responsibilities | Personalization | Improvement
Statement of Purpose

• based on the Demand, we would like to Tailor:
  – Session Configurations
  – Targets and Objectives
  – Locations and Allocations

• ... in order to make a net + Impact on:
  – Health
  – Operations
  – Finances
  – Experience
Performance Measures

1. Financial Outcomes
   – Costs
   – Revenues

2. Operational Outcomes
   – Unmet demand
   – Waiting lines

3. Care Measures (e.g. quality targets)

4. Health Outcomes (e.g. hospitalizations)

5. Experience of Patients and Team
Business Processes

1. Open Simulation Package
2. Define Market Characteristics
3. Create Scenarios
4. Make Informed Decisions
5. Collect Simulation Outcomes
6. Run Simulations
7. Control Selected Model
8. Evaluate & Recalibrate
9. Implement in Practice
Create a Scenario to Test

• Confirm or modify population demand
• How to care for Level I, II, III populations
  • % Care in Clinic
  • % Remotely
  • % Indirectly
• Confirm or modify population characteristics
• Confirm or modify team responsibilities
• Confirm or modify expected service durations
Next Steps – Sim Development

• Short-Term:
  – Encode remaining models (care, health, exp., $$)
  – Complete fixed-staffing simulation model
  – Operationalize simulation-driven results:
    • Standard Operating Procedures
    • Training Materials and Programs
    • Job Descriptions / Negotiations

• Long-Term:
  – Migrate toward closed-system simulation model