

Some Implications of Complex Adaptive Systems for Developing Logic Models

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www.jamorell.com

This presentation is part of a series of workshops and panels at AEA 03 designed to further the application of systems perspectives in evaluation. As a post-conference follow-up to these activities, we have developed a listserv for ongoing conversation. To join, go to <http://evaluation.wmich.edu/archives/index.html>, and sign up to EVAL-SYS

Relevant Issues from the Aardvark Case

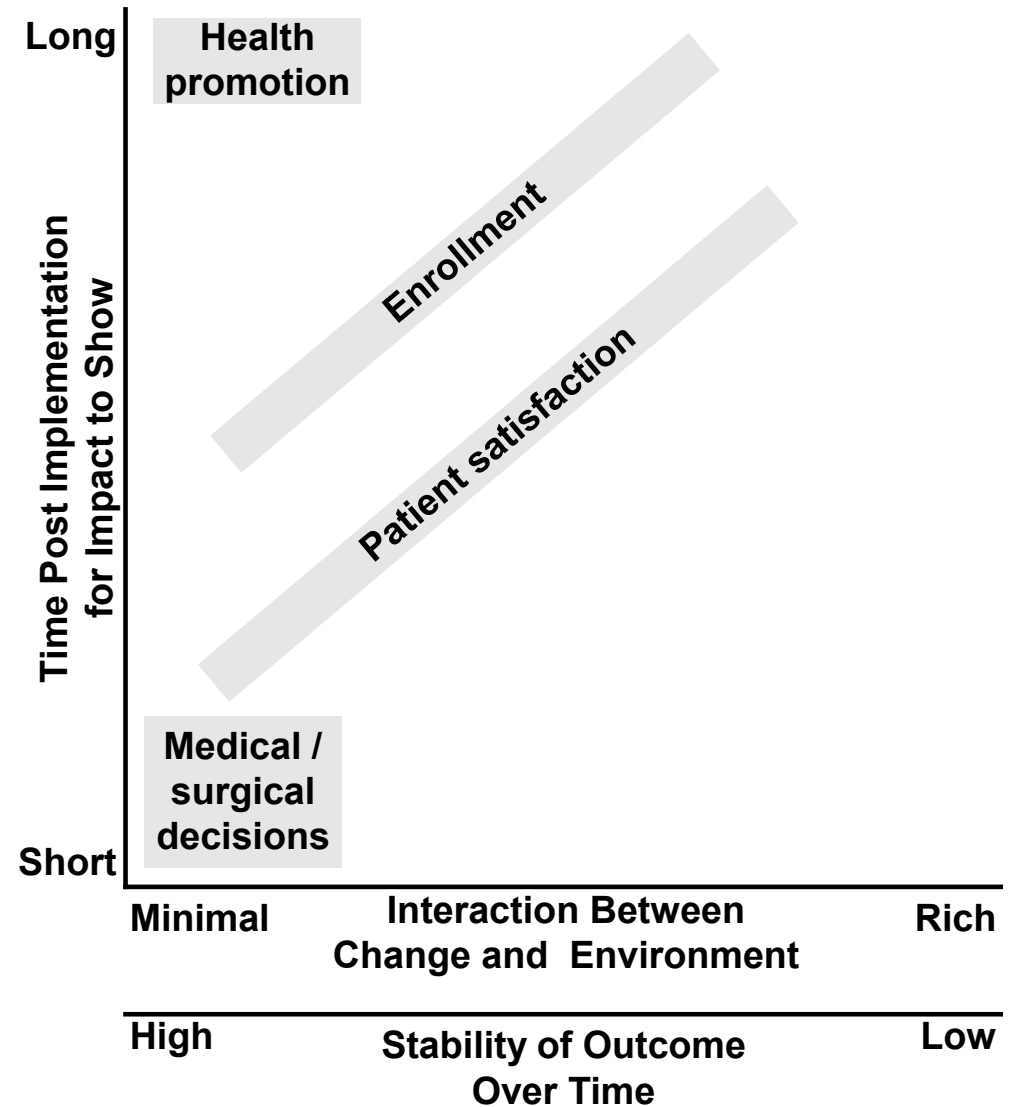
- Aardvark's Ix is
 - unique in the community
 - will stay that way for 12 – 18 months
- Expected outcomes
 - **Clinical**
 - Short time frames: medical/surgical choices
 - Longer timeframes: health promotion and prevention
 - Patient satisfaction
 - Enrollment
- Aardvark has competitors who
 - Have good reason *not* to implement Ix, but
 - may find it necessary for competitive reasons
- Knowledge about health services spreads rapidly in the community

Two System Dynamics that Affect the Evaluation

- Variation in
 - Time between change and system's response
 - Richness of interaction between a change and its environment
- System reaction to change can be seen as multiple organisms competing on a fitness landscape

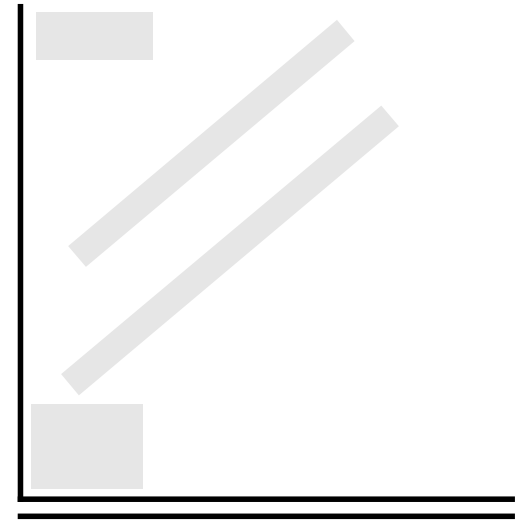
Implications of Case Specifics + Adaptive Systems Principles

- More stability over time for some outcomes than others
- Stability depends on how a change interacts with its environment



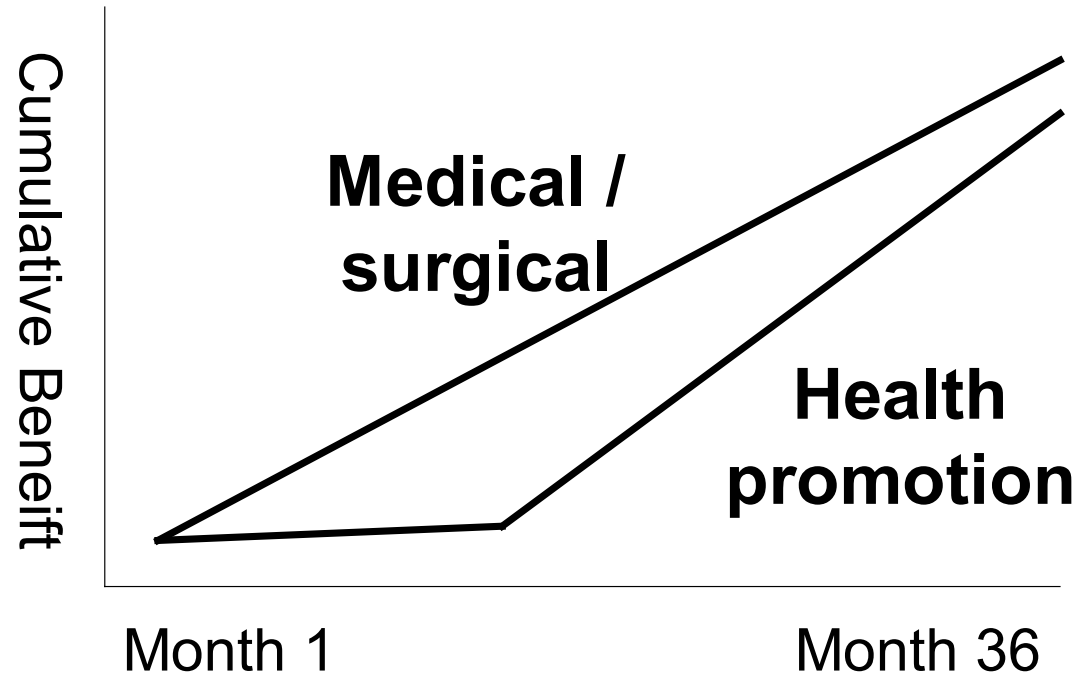
Why These Trajectories?

- Medical /surgical
 - Short time between diagnosis and treatment
 - Little reason for system to modify treatment - outcome relationship
- Health promotion, prevention
 - Long time between action and health change
 - Little reason for system to modify treatment - outcome relationship
- Enrollment
 - Aardvark's competition cannot react quickly
 - If they implement Ix, competitive environment changes unpredictably
- Satisfaction
 - Unless other Ix systems appear, satisfaction will be high
 - Can't know how others will improve patient satisfaction, or Aardvark's response



Implications for Models and Methods

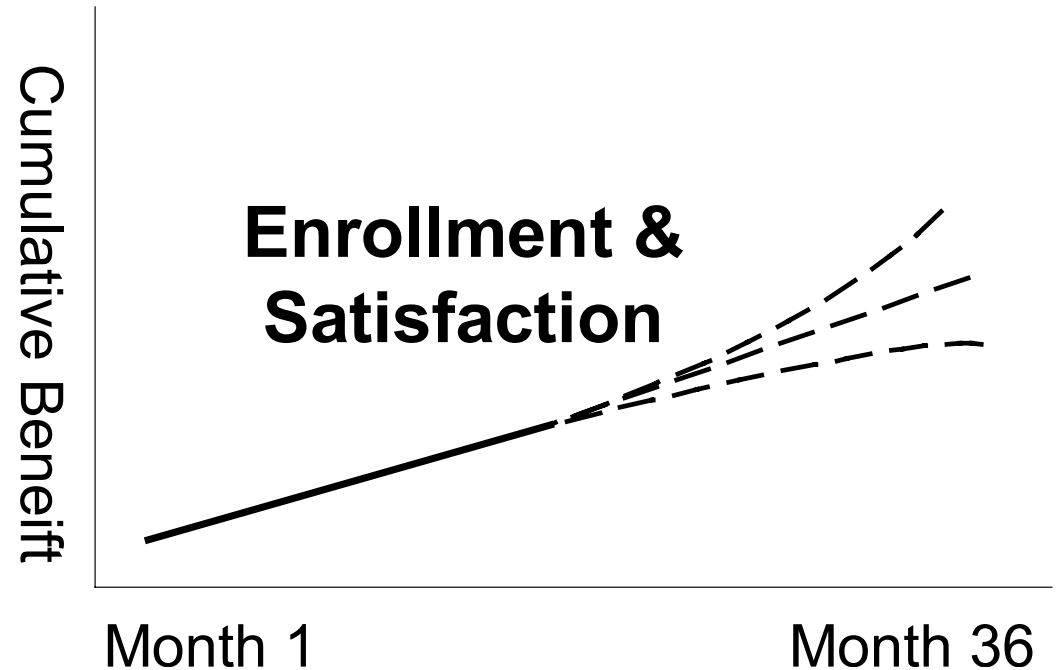
- Relationship between treatment and outcome will be stable and known for entire evaluation



- Linear change can be assumed with appropriate timing for different impacts
- Quantitative methods alone can suffice

Implications for Models and Methods

- Months 1 – 18
 - Stable relationship between treatment and outcome
 - Quantitative methods alone can suffice



- Months 19 – 36 Qualitative methods crucial to
 - Identify consequences
 - Develop models to understand relationship between change and its consequences