Managing What Matters: Overcoming Obstacles to Effective Healthcare

Treating the Whole Person: Optimizing Wellness

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8:40-9:35 a.m.
Terri A. Lewis, PhD, NCC
Obstacles to Care

1. Characteristics of systems of care
2. Human factors common to consumers & clinicians
3. Cognitive errors, design factors, & data
4. Expectations for outcomes
Humans Live in Complex Adaptive Systems (CAS)

• All the parts of the system are interdependent
• Actions have consequences at multiple levels
• Optimizing one part can lead to poor overall system performance
• Systems are driven to self organize
• Organizational structures drive decision behavior+/-
• Mental models influence actions
“Coarse Damping”

The elimination of unwanted variations and fluctuations in system behaviors to maintain equilibrium or homeostasis; the basis for development of measures

Ex.

• **Chaos** - a form of coarse damping in ‘time,’ *(synchronicity, process)*

• **Complexity** – a form of coarse damping of ‘structures,’ *(entropy, difference)*
Types of human thinking

System 1 (S1)
- Automatic Activities
  - Memory
  - Perception
  - Automatic thinking: considering something beautiful by glancing at it

System 2 (S2)
- Intuitive Thought
  - Expert
  - Heuristic
  - Intuitive thinking: result of prolonged practice and ability to complete the phrase “bread and…”

- Slow, deliberate, effortful
- Takes over difficult tasks
- Can program automatic functions of attention and memory

- Biases, systematic errors in specified circumstances
- Answering easier questions than the ones asked
- Poor understanding of logic and statistics

Figure 4. Types of human thinking.
Thinking Fast & Slow

Heuristics are simple, efficient rules (filters) which people often use to form judgments and make decisions.

They are mental shortcuts that usually involve focusing on one aspect of a complex problem and ignoring others.

We believe they are generally true, even if they are not always true or true in every case.
Self Organize to Reduce Complexity

- Surgeon General reports
- Public service advertising
- Media campaigns

- Pain management tools
- Physician intervention
- Addiction prevention

- Community coalitions
- Dosing prohibitions
- Access restrictions

- Laws & regulations
- Behavioral taxes
- Insurance limitations

- Epidemiological models
- System models, networks, data
- Federal campaigns
Human Factors & Mental Models

• **Cognitive distortions** ways that our mind convinces us of something that isn't really true. These inaccurate thoughts are usually used to reinforce negative thinking or emotions and sound rational and accurate, but really only serve to reinforce the negative.

• **Logical fallacy** is an error of inductive or deductive reasoning that stems from an error in a logical argument.

• **Cognitive bias** is rooted in thought processing errors often arising from mental mistakes that cause us to think in certain ways that can lead to systematic deviations from a standard of rationality or good judgment.
Cognitive Errors

**System 1 - Survival**
- Pattern recognition
- Overconfidence bias
- Halo effect
- False consensus effect
- Group think (bandwagon)
- Self serving attribution bias
- Sunk cost fallacy
- Cognitive dissonance reduction

**System 2 - Rational**
- Confirmation bias
- Authority bias
- Small numbers fallacy
- Ingroup bias
- Recall bias
- Anchoring bias
- Availability bias
Parsimony: A scientific and philosophic heuristic that is interpreted as requiring that, if there are a number of explanations for an observed phenomena, the simplest explanation is preferred. “When you hear hoofbeats, think horses not zebras.”

Merriam-Webster
@MerriamWebster
Biases

1. (in a measurement process) systematic error.
2. any influence or action at any stage of a study that systematically distorts the findings.
3. (of a statistical estimator) the difference between the expected value of the estimator and the true parameter value.

Ex.
• Anchor bias
• Confirmation bias
• Framing bias
Confirmation bias. The tendency to search for, interpret, focus on and remember information in a way that confirms one's preconceptions.

Jeff Sessions on Marijuana: Drug is 'Only Slightly Less Awful' than Heroin
**Anchor bias.** The tendency to rely too heavily, or "anchor," on one trait or piece of information when making decisions.

✅ **Cost**  
Source  
Availability  
Safety
**Framing bias.** The tendency to react to judge or interpret the exact same information in distinctly different ways, depending on how it is presented to us or ‘framed.’

*Example:* Addiction, overdoses can be reduced by reducing the number of prescriptions for opioids and the MED/dose for persons with chronic pain

<table>
<thead>
<tr>
<th>FRAMING</th>
<th>TREATMENT A</th>
<th>TREATMENT B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Reducing opiate prescribing saves lives.</td>
<td>“A 33% change of saving 16,000 people, versus a 66% possibility of saving no one”</td>
</tr>
<tr>
<td>Negative</td>
<td>16,000 people will die annually of opiate overdoses.</td>
<td>“A 33% chance that no people will die, versus a 66% probability that all 16,000 persons will die.”</td>
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</tbody>
</table>
**Bandwagon effect.** A psychological phenomenon in which people do something primarily because other people are doing it, regardless of their own beliefs, which they may ignore or override; *leads to early adoption of systematic error*, whereby the rate of uptake of beliefs, ideas, fads and trends increases the more that they have already been adopted by others; *‘early adopters’*
Population Health data is interpreted in accordance to statistical means, e.g., the Bell Curve

“Regression toward the mean” -

The tendency of data to move to the middle or the mean

Management of “dose”
Normalization of Deviance: System2 ➔ System1

• Institutionalization exposes newcomers to deviant behaviors, often performed by authority figures, and explains those behaviors as organizationally normative using the wrong metrics e.g. guidelines.

• Socialization, which is often mediated by a system of rewards and punishments, aims at determining whether the newcomer will or will not join the group by adopting the group’s deviant behaviors, e.g. payment systems, DEA licenses.

• Rationalization enables system operators to convince themselves that their deviances are not only legitimate, but acceptable and perhaps even necessary, e.g. laws, regulations.

• Institutionalization, socialization, and rationalization work in a mutually reinforcing manner to dissolve anxiety by automatically triggering heuristics and biases as tools for decision making.

John Banja, 2011
Equilibrium in the CAS is NOT the same as the Mean or Median
What does a good outcome look like to you?

**Chronic Pain Cycle**

(a) Systems thinking exercises

(b) Systems models for policy analysis
Managing our Mental Models

Acute pain

Subject to pattern and small numbers bias

Chronic pain

Occam’s razor, parsimony, framing bias
characteristics of complex systems

a ‘complex’ system

emergent behaviour that cannot be simply inferred from the behaviour of the components

complex systems

involve:

many components

dynamically interacting and giving rise to a number of levels or scales which exhibit common behaviours

transdisciplinary concepts across types of systems, across scales, and thus across disciplines

chaos fine-scale influence large-scale behaviour

emergence hierarchies self-organization control structures composites substructure decomposability

evolution
Reframing the System of Care for Consumers
Reframing Your System as a Learning System

Quality of life

Social Indicators of Health

Resource management

Priorities

Impact of disability on adaptation to community functions and demands

Classification of Handicap

Participation restrictions

Environmental (Difference)

Classification of Disability

Activity limitations Personal (Ordinal, Ratio)

Classification of Disease

Impairment (Descriptive, Nominal)

Policy, Regulation, Resource allocation, Social systems, Interaction, Participation & Exchange

Influence of Disease or disorder on functioning

Community Context

Environmental factors

Evaluative, Formative, Summative

Impact Effect

Outcomes Processes

Results Activity

Inputs Informs

WHO ICF Model
System Obstacle 1.

Design your system of care for learning

1. Grasp the role of complexity and simplification of time, process, & structures
2. Look for problems associated with human factors
   - Continuous improvement practices get to error analysis & root cause
   - Conflicting expectations creates a vicious cycle of low expectations
   - Look for stopping factors
3. Look for errors of design (reframe)
   - Are we doing the right thing?
   - Are we doing things right?
   - Measures are improperly constructed?
4. Look for errors of expectancy
   - Who are the stakeholders? Are expectations aligned?
   - Address the vicious cycle of low expectations
System Obstacle 2.
Cognitive errors are shared errors

• Build in adaptive balancing mechanisms – allow for multiple paths to success
• Physicians & consumers are partners in shared outcomes.
• Build in regular error analysis and procedures to test for cognitive errors
• Learn how measurement systems work in a system and design your data collection accordingly
• Measure only what matters across the influences of time and structures
• Test your theory of treatment by tracing it through the patient experience and into the community system that you share
• Satisfaction is measured in impact, not necessarily the absence of pain.
System Obstacle 3. Design Errors Impair Innovation, Agility, Improvement, Learning

- Manage your system, don’t let it manage you
- Assist the individual and their care partners to manage their illness within the conditions of care support and community
- Work to impact, not guidelines, doses, or the calendar
- Take responsibility for collaborating in learning so that you can be an effective team members for each other
System Obstacle 4.
Re-imagine Expectations to Fit the Community Model

• Promote the use of interventions that draw on Community-based participatory research (CBPR)
• Link interventions to sustainable health promotion activities and outcomes
• Use wide systems approaches that incorporate outlier subgroups
• Encourage consumers to collaborate with community partners and networks
• Obtain regular inputs from Family advisory panels
Complex systems are dynamic and health metrics incorporate social determinants of health
Chronic pain is everybody’s business. It’s not somebody else’s problem.
I Congratulate RSDS.org !!

- Terri Lewis, PhD, NCC
- Rehabilitation & Mental Health
- Silver Point Tennessee
- tal7291@yahoo.com
- @tal7291 terri.a.lewis

- National Changhua University of Education, Taiwan ROC
- Southern Illinois University Carbondale, Illinois USA