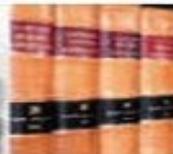


# Systems Thinking for Inspections with Systemic Issues

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# Systems Thinking

## ► Objectives:

- Define Systems Thinking Approach
- Define Structural Thinking
- Intro to Systems Thinking Tools
- How to apply it to inspections



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# What is Systems Thinking?

- ▶ It is a framework for seeing interrelationships rather than things, for seeing patterns of change, rather than static snapshots.
- ▶ Systems thinking is the use of principles, tools, and processes for the purpose of better understanding the issues and challenges you face, recognizing their effect on and by these interrelationships.



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# What is Systems Thinking?

- ▶ Systems thinking provide a better understanding of messy real-world problems we face that may not fit into what we may be used to seeing.
- ▶ It differs from analytical thinking in that the focus is on understanding the issue or problem as part of a larger whole.



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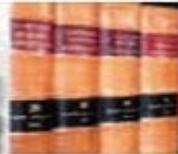


# What is Systems Thinking as it applies to Inspections

- ▶ Looking at a process or system and determining what the issues/symptoms are.
- ▶ What is the root cause of those issues/symptoms?
- ▶ Determine a workable solution to improve the process.



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# Levels of Thinking

- ▶ **Event–Level Thinking** – we tend to focus on events (e.g. missed deadlines, unexpected crisis, not meeting metrics)
- ▶ **Pattern–Level Thinking** – by recognizing a pattern to a series of events, the focus moves from the single event to exploring how these events are related and what caused them. *Has the same problem occurred in the past? Are these events related?*
- ▶ **Structure Level Thinking** – The manner in which systems elements are organized or interrelated. *Ask yourself –what is it about the structure, policies, procedures, incentive systems, culture, environment is causing the problem to occur?*



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# Structure drives behavior

- ▶ **Structural Level Thinking** – Why is this happening? Why is this continuing to happen? What actions get rewarded?
- ▶ **Exercise:**
- ▶ Some years ago the school board for the City of New York decided to hold individual schools more accountable for student learning and performance. The board decided to link budget allocations to the individual schools students test scores.
- ▶ *What are the structure(s) most affecting behavior in this story – and how? What action gets rewarded in this example?*



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# Things to consider...Time delays

- ▶ **Principle in Action:** When cause and effect are not closely related in time and space it makes it harder to learn from it.
- ▶ Examples: hot stove, dominoes
- ▶ It is more difficult to see cause and effect when time delays are present.
- ▶ It is important to note cause and effect are not absolutes; organizational context and environment impact cause and effect.



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# Cause and Effect

- ▶ Key Questions to ask:
- ▶ What prior actions/solutions have led to or exacerbated the current problem?



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# Exercise

- ▶ Christian Charities wanted to do something about poverty. They wanted an intervention that would ease the suffering of 100 people in a community that would otherwise be destined to a life of starvation. They decided to use the organizations money to buy food for those people.

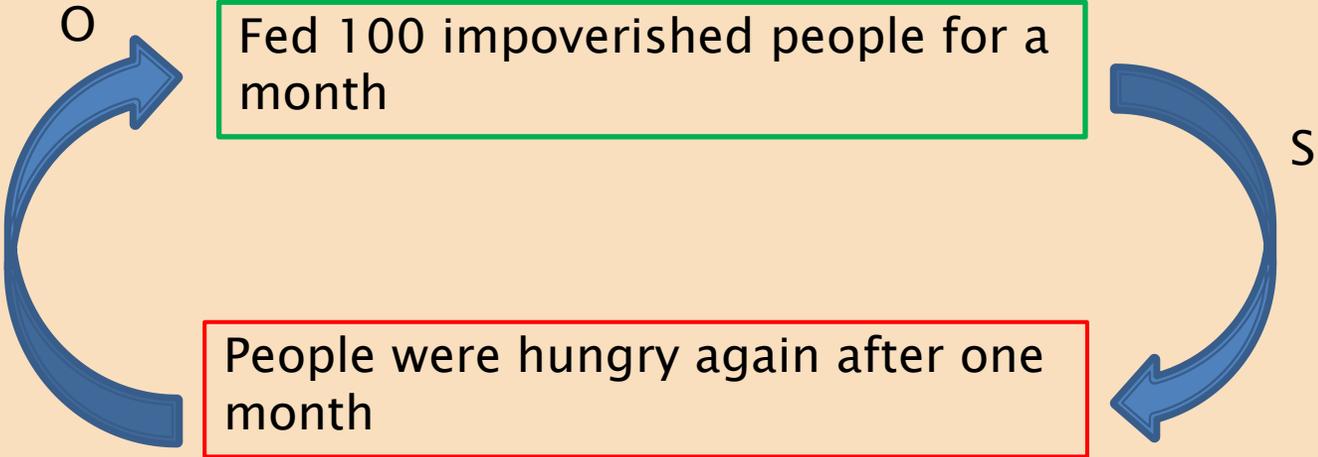


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# Exercise: Causal Loop

- What actions might reasonable be taken to address these situations?
- Did the actions taken work?
- Were there unintended consequences?



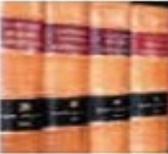
Christian Charity efforts had to increase to feed more hungry people

People who heard about this program came in droves

demand for food increases



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# Symptom vs. the Problem

- ▶ It is usually easier to see the symptoms of the problems rather than the underlying problem itself.
- ▶ **Key Questions to ask:**
- ▶ Do we really see the problem or only a symptom of the problem? How would we know?
- ▶ Does the problem/symptom continue to occur even after our solutions are implemented?



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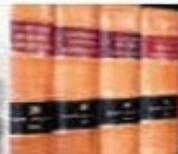


# Systems Thinking Tools

- ▶ Causal Loop diagrams show the relationships between separate variables, how a change in one variable “causes” a change in the other
- ▶ <https://youtu.be/tTo06jbSZ4M>

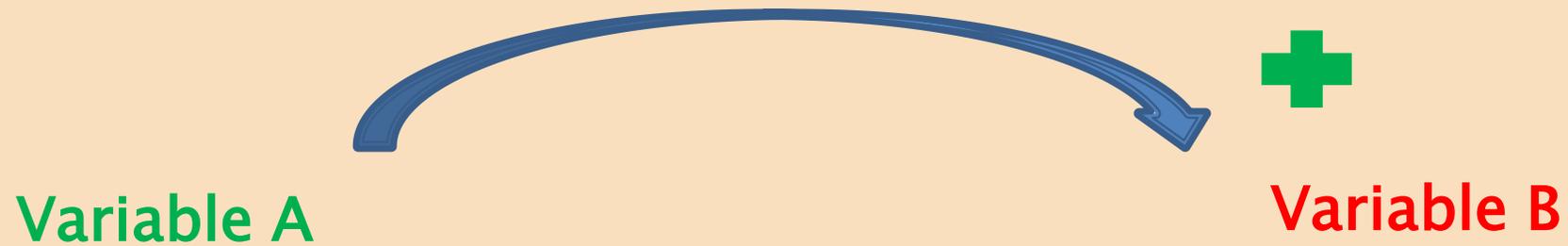


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# Systems Thinking Tools – Identifying variables and causal relationship

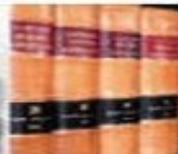
- ▶ Variable A: Members enroll and disenroll with managed care organization based on perceived level of care and service
- ▶ Variable B: Managed Care Organization are getting paid a per capita rate for each of their enrolled members



This is called a Supporting Link or Reinforcing Link

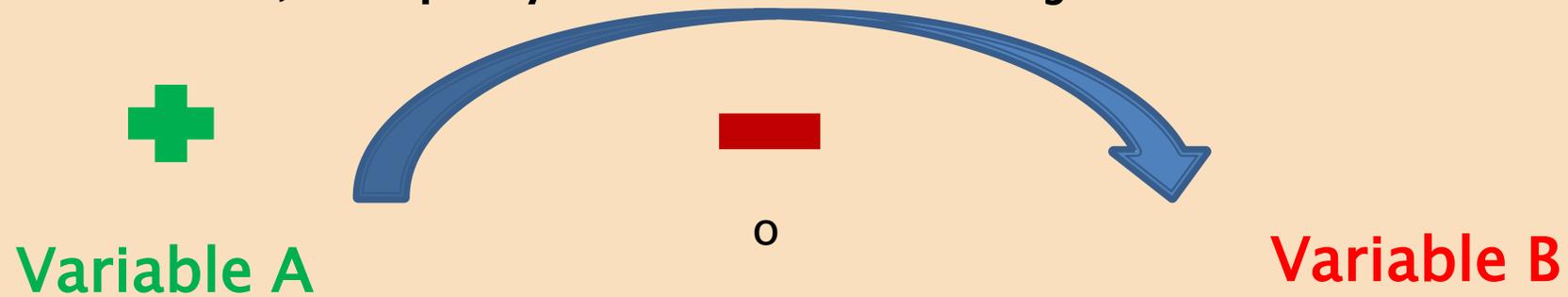


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# Systems Thinking Tools – Identifying variables and causal relationship

- ▶ Variable A: Overtime Worked
- ▶ Variable B: Employee Morale
- ▶ As amount of overtime worked goes up, employee morale goes down, employees seek other jobs



This is called an Opposing Link

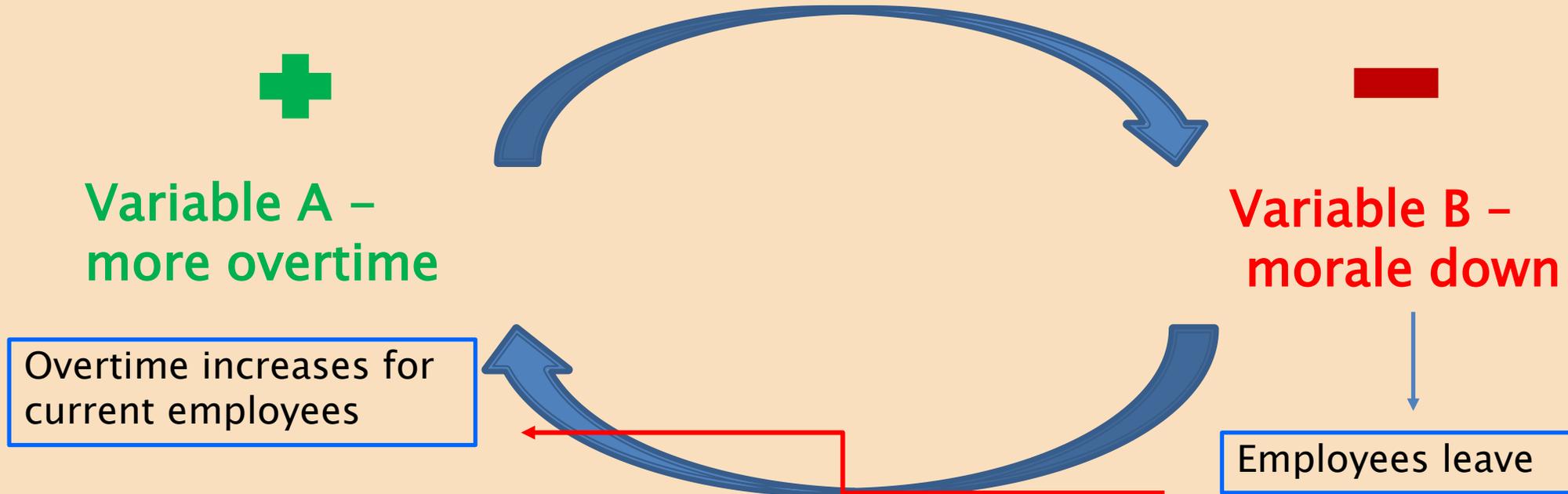


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# Systems Thinking Tools – Identifying variables and causal relationship

- ▶ Variable A: Overtime Worked goes up
- ▶ Variable B: Employee Morale goes down; employees leave



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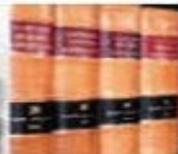


# Systems Thinking Scenario and Exercise Part 1

Health Inspector in San Antonio walks into a Chinese food restaurant for an unannounced inspection due to several complaints of foodborne illnesses. She notices feathers on the floor of the food preparation area. She walks around and out back and notices dead chickens hanging on a line outside of the food preparation area covered in flies. She walks into the food prep area and speaks to the owner. He indicated the chicken is fresh and uses it for service to his customers



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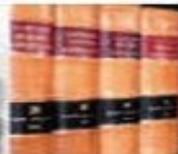
# Systems Thinking Scenario and Exercise Part 2

She explains to him that although the chicken is “fresh” it is from an unapproved source and cannot be used for public consumption. She gathers all the cut and processed chicken and dumps the chicken into the trash. She notices that the owner attempts to reach in the trash and get the chicken.

Name the variables and fill out the causal loop handout and provide a workable short-term and long-term solution



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# Systems Thinking Scenario and Exercise # 2

The class will have 15 minutes to:

Develop Scenario

Name the variables

Determine the type of Causal Loop (Supportive or Opposing)

Provide potential short and long term solutions

Teams will name a team leader to present



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# Systems Thinking in Analyzing Problems

- ▶ Look for evidence of systems principles
- ▶ Anticipate unintended consequences of proposed solutions
- ▶ Look for high leverage interventions

## Systems Thinking in Developing/Implementing Organizational Processes

- Use causality and reward principles in designing policies
- Use archetypes to understand the consequences of actions



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# Systems Thinking and Managing Change

- ▶ Look for structural impediments to implementing change efforts
- ▶ Understand what's driving people's reactions to change efforts

## How do I get my team to use systems thinking?

- Start with an issue or a problem, and raise some of the systems principles questions for your team to discuss: “What about the current process is allowing?/causing this to happen?”



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# Systems Thinking Resource Materials

- ▶ Anderson, V. and Johnson, L. Systems Thinking Basics, Pegasus Communications, Waltham, MA.
- ▶ Senge, Peter (1990), Fifth Discipline, Doubleday: New York.
- ▶ Senge, Peter et. Al. (1994), Fifth Discipline Fieldbook, Doubleday: New York.



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