What is system thinking?

Why system thinking?

Think about most of the problems that we face in the NHS, have they just occurred? Are they new? I would suggest that in most cases the answer is a categorical 'no'. Instead our systems have allowed them to perpetuate over many years and we have taken fragmented, linear, cause-effect, culprit-focused, fingers-of-blame approaches to dealing with them. In most cases, this approach has been ineffective, resulting in nothing more than sticking plasters being placed over problems that eventually work loose. Or rather, sometimes the sticking plasters create new problems that we must deal with.

So, what is system thinking?

I think Peter Senge offers the best definition of what we mean by system thinking when he suggests that it is a 'discipline for seeing wholes. It is a framework for seeing interrelationships rather than things, for seeing patterns of change rather than static 'snapshots'. It is not, as some leaders seem to think, just the action of telling everyone in a system to work better together.

Systems thinking tries to understand the rules that determine how different systems—some seemingly unrelated—behave, how they interact and how they influence each other. At its heart, system-thinking is about relationships.

We always tend to look for **the cause of any problem** in situations that are close in space and time. The reality is, however, that sometimes the problem is a consequence of the dynamics of one or more bigger systems; systems that we are not able to see.

By ignoring the dynamics underlying a problem - systems blindness - it is impossible to establish a strategy to successfully solve it. How many times have you seen decisions being made in your organisation, which seem to work in the short term, but in fact do not solve anything?
The problem is that **our perception is unable to detect threats hidden in larger systems**. We see the danger when we hear and see a car close to us, but not when we are breathing carcinogenic particles in a polluted atmosphere.

And what stops us seeing systems?

Systems are invisible to our eyes. We try to understand them indirectly through mental models (beliefs, assumptions and values that we hold) and then perform actions based on these models.

The more complex a system, like health and social care systems, the more difficult it is to build a mental model of the system, and the harder it becomes to create long-term effective solutions.

The reality is that most problem within systems are self-inflicted. We think about a change that we want to make, we rush to implement it, but we don't necessarily anticipate the negative consequences it might have on the system as a whole. These are the "unintended consequences" that are the result of many changes.

This failure to anticipate is referred to by Daniel Goleman as **systems blindness**. Systems blindness is the main issue that we struggle with in our work. What we think of as "side effects" are misnamed. In a system, there are no side effects—just effects, anticipated or not. What we see as "side effects" simply reflect our flawed understanding of the system. In a complex system, cause and effect may be more distant in time and space than we realise.

So, what does all this mean?

System-thinking is, therefore, a way of changing our mind-sets and by looking to "see the world anew to better deal with the complexities that we face ."

To do this, we need to first understand the two different kinds of complexity, and why we are good at one, but poor at the other.

The first kind of complexity is **'detail'** complexity. This is linear, sequential, cause-and-effect, "snapshot" kind of detail. It is like having all the parts and a clear understanding of how to assemble them into, for example, an IKEA bookcase. It may be a challenge, but we're very good at this kind of detail complexity.

The second kind of complexity is '**dynamic'** complexity. This is more about "process" than tangible product. Its "cause and effect" are subtle at best—and often obscure or totally hidden to us. Its "structures" are the patterns of interrelationships that recur—again and again, but the appropriate interventions are not obvious to us.

We are usually not very good with **dynamic** complexity. Instead of "linear" language in its written form, the real/leverage thinking, as in our dealing with dynamic complexity, says Senge, comes from looking for "circles of causality". This comes from understanding three crucial variables in every "system":

1. Reinforcing or **amplifying feedback**
2. Balancing or **stabilising feedback**
3. **delay**

Reinforcing feedback is both the "engine of growth" and the agent of decline—as in the "snowball effect." With reinforcing feedback, "momentum is everything," regardless of its forward/backward, up/down direction.

Balancing feedback is the force - whether pedal or brake - behind all goal-oriented behaviour. Life as we know it is a "balancing process". These

processes—except for obvious resistance—are difficult to see, so it often looks like nothing is happening when they are at work, whereas reinforcing processes are usually obvious.

The third factor in circles of causality is delay. "Systems seem to have a mind of their own. We do not like impediments when we want something done, we just do more of what we "know" to do. and do it more aggressively. We then expect sure results, but they don't come. In fact, matters usually get worse the more we are proactive.

Reinforcing feedback, balancing feedback, and delays are all fairly simple. They come into their own as building blocks for the "systems archetypes" that better help us understand the systems in which we exist.

If you would like to explore system-thinking in more detail, and how it might help you in your work, please contact gareth@nhselect.org.uk