

Thoughts on the complementarity of lean thinking and system thinking for global service improvement in health and social care

Professor Eric Wolstenholme, Symmetric SD

Both lean thinking and system dynamics are tools currently emerging from success in the private sector and being applied to generate improvements in health and social care. This short paper suggests that together they can form a comprehensive union of techniques for gaining in-depth, system-wide and sustainable benefits.

Systems thinking is a methodology evolving from the application of system dynamics; a strategic simulation tool aimed at mapping and modelling the global interaction of processes, information feedback and policy across organisational sectors. It is being used widely in health and social care to design sustainable patient outcomes and to assist the attainment of performance targets for all service agencies along whole patient pathways. It can help to test new policies and to eliminate those which might have unintended consequences for the system as a whole. It also creates learning and communication for new-world ideas and insights.

Lean thinking on the other hand is essentially an operational tool, focussing on stock, waste, error and cost reduction, together with efficiencies improvements. In order to do this lean thinking subsumes many independent techniques arising from total quality management and operational research. These include; process and value mapping, statistical techniques and problem solving methods, all usually wrapped in a cyclic method of process improvement and training. The emphasis is on easily assimilated concepts applicable to individual processes, which can be rolled out across individual organisations for immediate gains in very tangible performance measures.

Both systems and lean thinking have in common the aim of changing cultures and improving thinking for change and both have important roles to play in generating better performance. They are quite distinct in their sphere of application but can be mutually applied to achieve more than either alone.

The key lies in their strategic and operational complementarity.

Lean thinking needs Systems Thinking: Without a long-term strategic direction, lean thinking can often miss important foci of change. Or improve one organisation or sector of a supply chain or patient pathway, but possibly to the detriment of others. There is also a danger that problems simply gets moved around in a time-consuming set of activities, which are themselves inefficient and create an initiative overload that detracts from core business.

Systems Thinking needs Lean Thinking: Without detailed implementation assistance the potential outcomes of system dynamics studies, which demonstrate the location of effective interventions, might not be fulfilled.

To realise the best of both methods, it is suggested that systems thinking and system dynamics simulation should be applied together, with systems thinking being as a precursor to lean thinking. By identifying effective global interventions, often well removed from observable problem symptoms, systems thinking would facilitate the more effective use of lean thinking for detailed operational improvement.

For example, recent work with system dynamics models in health and social care which modelled alternative policies in primary, acute and post acute sectors of older people's pathways has demonstrated that improvements in acute hospital performance might be best achieved, not by detailed changes to acute hospitals, but by generally improving post acute care. Such actions indirectly influence hospital discharges and eliminating acute hospital coping strategies. This work if flowed up by lean thinking could have allowed lean thinking techniques to be effectively targeted to facilitate detailed and specific post acute changes.

It is suggested that this linking of techniques could be generally beneficial in many applications throughout health and social care.