Supplemental Digital Appendix 1

Key Principles Underpinning the Design of Medical School Evaluations from a Complexity Theory Perspective

1. Engage in collective sensemaking to analyze and design appropriate evaluation questions that address the meaningful concerns of the relevant stakeholders and use resources judiciously.

2. Reframe evaluation questions using a logic model, where inputs and outcomes have a non-linear relationship. Evaluations should be multimethod and, where possible, participatory.  

3. For further sensemaking, seek large amounts of data and aggregate multiple micro- and macro-level indicators to allow for inductive outcomes to emerge.

4. Measure inputs that are likely to be important, those that provide energy to the complex dynamic system, and those for which small changes may lead to positive or negative feedback loops and surprising emergent outcomes.

5. Explicitly consider the influence (input) of nested systems--university, health system, society, etc. For instance, an analysis of the changes in these systems and the possible implications for the medical school should be undertaken at least yearly.

6. Consider the influence of relevant medical school activities, as outcomes are not predictably linked to these activities (due to emergence) and the curriculum is rarely delivered or received as intended.

7. Measure long-term outcomes (beyond graduation), including clinical outcomes. These are evident in the nested systems and need to be measured there, in conjunction with stakeholders in these systems.

8. After analysis, organizational learning requires educators to reflect on their findings, develop theory, and experiment with improvements. The goal is that the complex system of medical education changes; it may be simplified in places, gain new complexity in others, but outcomes overall will improve.