

Integration of Innovation and Technology as a Strategic Advantage for an Organ Transplant Program

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Lung transplantation has become the definitive therapy for patients with end-stage lung disease. The lung transplant rate at the Massachusetts General Hospital had previously been considered suboptimal by national standards. To identify opportunities for improved patient care and overall program growth, a comprehensive competitive strategic analysis utilizing system dynamics models was performed to better conceptualize the complex interactions between the medical, financial, marketing, and operational variables and capabilities that contribute to the functioning of an organ transplant program. This analysis included an exploration into the enhancement of program capabilities to create an optimal substrate for innovation, an understanding of the dynamics between innovation and external transplant program “appeal”, a recognition of the impact of time delays and need for synergism of capabilities, and the identification of potential vulnerabilities in a strategic plan that is centered on clinical innovation. The conclusions from this analysis directly led to the identification of a distinct strategic competitive advantage possessed by MGH over other transplant programs, highlighted by the capability to rapidly integrate several technological and operational innovative approaches into the clinical care of patients. The implementation of a strategic plan based on this paradigm shift led to an unprecedented increase in the annual MGH lung transplant volume, and has rapidly placed MGH among the elite transplant programs in the U.S. This paper highlights the utility of system dynamics models in performing a competitive analysis of a clinical program that deals with the care of complex patient populations.