Abstract

Healthcare systems pose a range of major access, quality and cost challenges in the U.S. and globally. We survey several healthcare network optimization problems that are typically challenging in practice and theory. The challenge comes from network affects, including the fact that in many cases the network consists of selfish and competing players. Incorporating the complex dynamics into the optimization is rather essential, but hard to models and often leads to computationally intractable models. We focus attention to computationally tractable and practical policies, and analyze their worst-case performance compared to optimal policies that are computationally intractable and conceptually impractical.