Health at Home, not Hospital

By The Numbers:

29
INTERVENTIONS

536,870,912
COMBINATIONS

20%+
REDUCED HOSPITALIZATIONS

In the past couple of decades, Care and Disease Management (CM/DM) has grown sharply, responding to greater need for healthier living. The clinical models are various, often including telephonic nursing care. Measurements include hospitalizations averaging $10,000 each; re-admits; ER visits; adherence to medications; quality of life; etc. Simultaneous statistical design offers a solution since thousands of people in a population are given care by separate teams of care providers. Mathematically, this problem-type is similar to multi-channel retail sales optimization.

A simultaneous-design-set of three was run with 29 interventions, randomized to 47 telephonic nurses caring for thousands of homecare patients. The results emerged within a month, and the story changed little as the data accrued. After implementing, the total problem-solve cycle-time was about 6 months, though improvement started during that first month. The improvement tracked long-term at above 20% reduction in hospitalizations, about a 25% reduction in re-admits, and productivity gains in the one-third region.

Statistical control theory was used to show stability in the authorizations measurement system but that perfection would be uneconomic--and not needed as the measurement noise had been improved to about 15% of total. This measurement breakthrough took no organizational effort. Oft-stated views were used for the first time, harnessing and releasing energy already being expended.

Implementation is always the hardest phase, but easy when led in tandem with management, using a simple discovery method. Since this is the next inductive cycle of the scientific method--generalizing the specific things that helped--a little short-term organizational angst is not surprising.

WHY WORK WITH NOBI? The case hinged on the complex randomization distribution theory. Concerns on nurse differences, patient panel differences, regression-to-the-mean and adverse selection were all pre-empted by good statistical design.

AMONG THE FINDINGS: The findings included: a new system helped with capital offset savings. Changes in pharmacy, principal care physician tactics, and care selection algorithms all helped. A synergy between telephonic and home visit nurses unleashed a new innovation. The productivity gain was from a new idea thought at the outset impossible to scale-up until the study revealed how. Nobi's routine inclusion of expensive solutions among mostly no-cost tactics allows optimal capital allocation, its optimization by synergies without cost, and prevention of ill-advised buys.