

Strategic & Management Consulting

Advanced Healthcare Supply & Demand Modeling

FTI Consulting's Center for Healthcare Economics and Policy applies cutting-edge economics and quantitative methods to assist clients in developing and implementing market-based solutions across a wide spectrum of healthcare activity. We use economic and financial modeling in developing evidence-based strategies to address go-to-market opportunities, fundamental changes in healthcare demand, and delivery within a system or community.



Comprehensive Population Health Reviews and Demand Assessment

The Center team has extensive experience working with all types of healthcare data, combining diverse data from multiple sources to understand holistically the health of a region.

We use inpatient and outpatient claims data to understand utilization trends and prevailing health conditions. We augment our analysis with area surveys of health behavior that affects use and costs, and demographic data to control for population-driven effects and allow us to compare against other regions.

In addition to descriptive analytics on a population's health, we prepare demand and health projections using models based on current trends.

Our experience with state discharge data, Medicare inpatient and outpatient data, hospital discharge data, commercial claims data, and prescription claims data enables us to choose and implement the best demand analyses for a system or region.

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Collaboration - Health & Economic Well-Being

Using extensive claims data, we provided actionable data on health, access, quality and cost, and the impact of health on workforce and competitiveness. We quantified the economic impact of health conditions including medical and productivity costs.

Niagara Falls Memorial Medical Center (DSRIP)

We assisted NFMMC with their efforts on the DSRIP program by providing data, analysis, and subject matter expertise to support NFMMC's strategic planning for integrated care and access. Our work demonstrated that the population served by NFMMC and its partners was especially suited to DSRIP initiatives including mental and behavioral health and cardio-pulmonary conditions.



FTI Healthcare Transformation Reform Model

FTI's Healthcare Transformation Reform Model simulates demand interventions, models of care, healthcare delivery alternatives, risk- or outcomes-based reimbursement schemes, and financial outcomes. The model allows healthcare organizations to predict and evaluate likely outcomes of proposed or defined process improvements before enacting change. It combines our microsimulation model to project demand with our financial and contracting experience to offer a comprehensive set of analytics to clients transitioning into outcomes-based payment systems.

Questions we can answer include:

- How will demographic and socioeconomic changes affect demand for healthcare services and health conditions in an area or for a system?
- What are the effects of investing in specific healthcare interventions or therapies?
- What is the most effective approach to move from fee-for-service to value/risk-based contracting?
- What are the impacts on clinical and financial viability of providers?
- What payment schemes will incentivize providers to engage in solutions?



Gap Analysis and Discrete Choice Modeling – Modeling Changes in Healthcare Supply

Discrete Choice Modeling

Healthcare delivery is not static: care shifts from inpatient to outpatient; service lines are added and others dropped; systems merge; new facilities are built; and some hospitals close. Discrete choice modeling provides insight into the effects of changes in supply.

The DCM predicts where patients will choose to seek treatment when their choices change – e.g., their preferred hospital closing a service line or the opening of a new outpatient center. It uses data on the current population including their characteristics, characteristics of existing facilities and choices patients make today to predict how patients will act when their options change.

Gap Analysis

As systems grow and healthcare evolves around them, it is valuable to occasionally assess how services offered line up with demand. The Center's suite of tools looks at service offerings across a system, reviewing physical and staff capacity and local demand and providing guidance on how a system can realign capacity to maximal effect.

Applications

- Siting decisions – *Expected patients at potential facilities*
- System reconfigurations – *What services are optimal candidates for capacity realignment across system? How would patients respond to addition or transfer of services?*
- Facility closures – *Would system retain its patients or would they travel elsewhere?*

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Academic Medical Center

Hired to assess the economics of a major capital investment, our team drew on multiple data sources to develop a projection of demand and revenues from constructing a new treatment center given the existing, competing facilities and future competitors.



Advanced Demand Projections

Microsimulation Demand Modeling – Modeling Changes in Population and Demand for Healthcare

Demand Projections

In many cases, simple demand assessment suffices to estimate future healthcare demands, but many decisions require more robust estimates. Microsimulation is a dynamic modeling tool that forecasts population, demographics, and disease prevalence by condition (e.g., diabetes or cardiovascular disease).

Microsimulation uses the individual as the unit of analysis allowing them to evolve over time—aging, starting and quitting smoking, having children. Each person has a set of unique socioeconomic and demographic characteristics mirroring the composition of the area population. Microsimulation models how the population naturally change, how behaviors that influence health evolve, and how these changes impact disease incidence. It provides better projections and flexibility by incorporating these multiple dimensions simultaneously.

Scenario Testing

In addition to its more realistic and dynamic approach, microsimulation enables the estimation of hypothetical interventions.

For example, to test an anti-smoking campaign, a model can be altered so that fewer people start smoking to estimate effects on lung cancer rates. The introduction of new treatments can be evaluated to estimate the potential effects on demand. The Center has extensive expertise running scenarios for COPD, diabetes, and other interventions. This provides an indispensable tool to project both health and healthcare costs in an ever-changing environment.

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Princess Alexandra Hospital (UK) | Projecting COPD

PAH hired us to help them determine how demand for healthcare services related to COPD and asthma would rise over the next fifteen years.

Using local population, demographic, health, and utilization data, we created a microsimulation model to project the population, its demographic profile, smoking behaviors, and prevalence of COPD and asthma through 2030. We incorporated nine interventions with potential to reduce prevalence. Through research, we identified the effects of those interventions and added them to the model enabling us to advise PAH on which interventions would have the greatest impact on their population.

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