## The Dartmouth Atlas of Health Care Research Study FAQs

### METHODOLOGY

**Why do you focus on hospitals?**

Hospital services are the single largest component of health care spending, and the decisions made by doctors and hospitals about who gets admitted, how long patients stay in the hospital, whether they go to the ICU, etc. drive both care and cost. A hospital's affiliated physicians decide who is admitted as well as the amount and type of care those patients receive. In turn, the probability of being hospitalized and admitted to the hospital and to its ICU is related to the capacity of the hospital compared with the size of the population it serves. The more hospital beds there are per capita, the greater the likelihood the patients will be admitted.

There is a uniform national database (Medicare claims) available for study.

**How were hospitals selected? Why did you choose to focus on hospitals with 400 or more deaths?**

Hospitals were selected by size, as determined by the number of persons "assigned" to each hospital (by linking Medicare claims by each enrollee to the hospital he or she used during the study period). The study was confined to hospitals with large enough populations to result in statistical stability and retain the confidentiality of patient information. The paper presents data from hospitals with at least 400 deaths during the study period. Hospitals with at least 80 deaths during the study period are discussed on the Web site.

**How do you ensure some patients were not more severe then others?**

The study only focused on patients who died so that the investigators could be sure that patients were similarly ill across hospitals; therefore, variations cannot be explained by differences in the severity of individuals' illnesses. The patients in the study had at least one of 12 chronic illnesses: cancer (solid tumors), lymphomas and leukemia, chronic pulmonary disease, coronary artery disease, congestive heart failure, peripheral vascular disease, severe chronic liver disease, diabetes with end organ damage, chronic renal failure, nutritional deficiencies, dementia or functional impairment.

**How are the methods used in this study different from other studies I've read?**

The Dartmouth Atlas Project uses a methodology, commonly known as small area analysis, which is population-based. The focus of small area analysis is on the experience of the population living in a defined geographic area, or, as in this study, the population that uses a specific hospital. Other studies have used a "turn style" approach, focusing on the number of procedures or hospitalizations in the hospital, without reference to the size of the population served.

**How does the Dartmouth Atlas Project get access to its data? Where does the data come from?**

The very large claims databases used in the DAP come from the Centers for Medicare and Medicaid Services (CMS), the federal agency that collects data for every person and

provider using Medicare health insurance. Access to this data is made available for research purposes. Other data sources include U.S. Census, the American Hospital Association, American Medical Association, National Center for Health Statistics, and Claritas, Incorporated.

**How are resources determined?**

First, Medicare enrollees are assigned to the hospital to which they have been most frequently been admitted to determine the size of the population "loyal" to each hospital in the study (people generally use one hospital exclusively). Then, using the number of staffed hospital beds at the hospital as the numerator and the number of persons assigned to the hospital as the denominator, the number of hospital beds per 1,000 persons in the population is determined. The number is adjusted for differences in population age, sex and race so that valid comparisons can be made between areas where the populations have different age, sex, and race characteristics (the older and sicker the population is, the more hospital beds they are expected to use).

## IMPLICATIONS

**Why is this information important? What are the implications?**

Health care spending is consuming an increasingly larger proportion of GNP every year, but there is little evidence that the amount we are spending is producing better outcomes for populations or for individual patients. Other countries spend far less per person and have better health outcomes. One way to address the question of why is to study which parts of the system appear to be producing "excess" levels of intervention, which are extremely costly but provide no additional benefit over other parts of the system that operate far more efficiently. Some researchers (including Mark McClellan, head of CMS) estimate that up to 30% of current spending on health care is wasted. Finding that waste and eliminating it would help provide financial security for the Medicare program without loss of value to the people it covers.

**How do you hope this data will e used?**

The current edition of the Dartmouth Atlas is intended to inform policy makers, payers, and health care leaders about the relative costs of chronic disease care not only across US states and regional markets (as in earlier editions of the Atlas), but also at the level of specific hospitals and hospital systems.

**If a hospital is seen as inefficient, does this mean that they provide poor care?**

The study did not directly measure the quality of care. Instead, it focuses on what could be called overcare – hospitalizations and procedures that cost money but do not provide a corresponding benefit (large numbers of days in intensive care during the last six months of life, for example, neither extend life expectancy nor provide high quality of life for the patient). Care is often described as "poor" if the *process* of care is poor; this study looks not at whether the thing was done right, but on whether the decision to provide the hospitalization or procedure was the correct decision to begin with.

**Will patients pay more out of pocket expenses with an inefficient hospital?**

Possibly, if co-payments are required for services such as hospitalizations and procedures that might have been avoided had the patient been treated more efficiently.

**What explains the differences in efficiency among different regions? Is it supply driven?**

The supply of such resources as hospital beds and specialist physicians does drive utilization – where there are more hospital beds per capita, more people will be admitted (and will be readmitted more frequently) than in areas where there are fewer beds per capita. Economically, it is important for hospitals to make sure that all available beds generate as much revenue as they can, since an unoccupied bed costs nearly as much to maintain as an occupied bed. Similarly, where there are more medical specialist physicians per capita, there are more visits and revisits to medical specialists. Other reasons for the variations in efficiency are related to practice style – the way physicians in the region practice medicine (using more or fewer prescriptions or tests, for example).

**How do we know that patients at some "outlier" hospitals are not really sicker, i.e. do they have more co-morbidity? And if we say no, how do we prove that?**

We use statistical adjustments to capture the degree to which things associated with illness – the age, sex, and race composition of the population – predict differences in illness rates. Heart attacks are more prevalent in some parts of the country, for example, so the rate of heart attacks is used as an indicator that the population is sicker and more likely to use hospital and physician services than residents of areas where heart disease is less prevalent. Even after these statistical adjustments are made, some hospitals have substantially different rates than would be expected given the level of illness and the age, sex and race composition of their populations, indicating that it is not sickness, but practice style (propensity to use more specialists and to treat patients inside the hospital) that results in the local rates we observe.

**Medicare DRG's restrict the revenue that a hospital can make on specific diagnosis per hospital stay. How is it possible that some hospitals can have many more ICU admissions, and more specialist visits – are these not part of DRG guidelines? In other words, is increasing the volume of certain types of services a way in which providers can "game" the system? Are there other such loopholes that the study exposes?**

The issue is not one of explicit "loopholes". It is that two factors are important in judging efficiency: volume (the number of discharges) and price (the payment per discharge). The DRG system uses few guidelines or sets of rules governing when to admit, discharge or treat patients with specific, measurable conditions. The system actually encourages gaming - to maximize revenues through providing more acute care because it pays better than preventive or primary care.

Because DRGs reimburse hospitals on a per-case (per-discharge) basis, it is possible for some hospitals to have more cases (or more discharges) during a given period of time. This would increase total payments, and would most likely be due to the greater availability of beds relative to the size of the population they serve compared to other hospitals. Physician services are paid on a purely fee-for-service basis, so more frequent visits would result in higher payments.

An oversupply of beds makes it easier to admit and readmit (what is known as "churning") patients in both acute care and ICU beds. Admitting physicians have discretion about whether or not to admit patients with many common conditions such as congestive heart failure, chronic pulmonary disease, and cancer complications. In low-resource, low-utilization areas, such patients are treated outside the hospital. In high-resource, high-utilization areas, they are admitted and receive treatment as inpatients Admission to ICU is also discretionary, and depends on physicians' opinions about necessity and the available supply of ICU beds.

An additional opportunity for hospitals to increase revenue is "up-coding" patients in order to increase DRG payments by claiming patients are outliers - that they have more co-morbidities and complications than average.

**What do you mean more health care is not necessarily better?**

The DAP has observed, over the course of its research, that death rates in areas where there is less capacity and less utilization are not higher than death rates in areas where there is much higher capacity and utilization – that is, the additional investment in hospital and physician resources does not “pay off” in increased longevity. Recent studies by Dr. Elliott Fisher add title here et al have indicated that there is *higher* mortality in high-resourced, high-utilization areas than in low-resourced, low-utilization areas. One explanation for this phenomenon is that the risks associated with hospitalizations and interventions – infections, medication errors, and the like – outweigh the benefits.

**Whose fault is it**?

Probably the most important driver of how health care resources are established and used is the current reimbursement system. Hospitals and doctors are paid for activities – hospitalizations, procedures, tests – and are economically punished for using less-invasive, less-costly strategies of care.

**Your study points out that frequent use of services is not associated with either better performance on technical measures of care or marginal improvements in survival and functional status. How do you convince people they don’t need additional care and how do you convince doctors not to recommend it?**

A recent study reported that almost three-quarters of Americans say they have declined interventions that were recommended by their physicians, because they thought that it was unnecessary or the benefits did not outweigh the risks or side effects. Other studies have confirmed that informed patients want much less surgery, on average, than surgeons are inclined to perform. Making patients aware of the risks and trade-offs associated with treatment choices is one good way of reducing demand for such things as hospital admissions, redundant or unnecessary testing, and surgery when there are other options.

Because physicians are reimbursed for activities, the system encourages them to do more. Paying physicians to spend more time advising patients about treatment alternatives (for example, lifestyle changes and medications, rather than bypass surgery), without penalizing them economically for doing less, is another important strategy for reducing utilization.

**How do you determine how much care is too much?**

By accurately measuring at what point more inputs do not result in better outcomes.

**Evidence in this study points out that more aggressive care in managing patient populations with chronic illness does not lead to longer length of life or improved quality of life. As a quality of care indicator are you insinuating that we shouldn't do everything we can to save a life?**

Ironically, research has found that in patients with chronic illnesses, more aggressive interventions result in *shorter* life expectancy, probably because of the risks associated with hospitalization. This indicates that the best strategy for extending the life of people with chronic illness is to focus on those activities that provide a survival benefit – better control of diabetics' blood pressure, for example – rather than on "heroic" end-of-life admissions to intensive care units.

**You include in your study a measurement for relative aggressiveness of terminal care that includes the % of patients who died during a hospitalization that included an admission to intensive care. You cite variation, yet why is this significant? Was there a higher or lower % of death associated with ICU admission?**

This measure attempts to capture the relative aggressiveness of care at the end of life. Admission to intensive care is an extremely aggressive intervention that has no measurable value to a dying person In light of the evidence that more aggressive care in managing patient populations with chronic illness does not lead to longer length of life or improved quality of life, higher scores on this measure can be viewed as an indicator of lower quality of death, and subjects that person to pain and suffering that do not extend life but diminish the quality of life.

**If payers utilize this data, as your study suggests, and direct their chronic disease populations to low cost and low utilization hospitals, aren't you limiting a patient's life-saving options?**

Quite the contrary. The evidence is that higher utilization does not extend life expectancy, and might be correlated with shorter life expectancy, compared to lower utilization. Therefore, sending people with chronic diseases to higher-efficiency, lower-utilization hospitals for their care could result in both lower spending and increased quality and length of life.

**This research suggests savings that can be realized within the Medicare system. Don't we need to look at the whole picture to truly realize savings?**

Obviously more information about the non-Medicare population would add to our knowledge about what is going on in the system and how it could be improved. Lacking that information, however, we can say two things. The first is that, even if we redirected *only* Medicare into high-quality, high-efficiency patterns of resource allocation and utilization, we would realize tremendous gains in quality and reductions in spending. The second is that, in several state-based studies of all health insurance claims (both Medicare and commercial) we have determined that the variations in resources and quality in the non-Medicare populations closely resemble those in the Medicare population. So the experience of Medicare enrollees is a reliable predictor of the experience of the non-Medicare population.

However, a hospital's ranking in terms of per capita spending may vary substantially for commercial payers based on market-negotiated (rather than CMS-set) unit prices and the greater spending on non-chronic conditions such as pregnancy. The best strategy for addressing these limitations would be for *all* payers and self-insured employers to work

together to produce resource input and utilization data for cohorts across Medicare, Medicaid and commercially insured patients. The recently announced partnership between CalPERS and the Pacific Business Group on Health to build stakeholder consensus on a standard set of metrics for evaluating hospital efficiency of California hospitals is a very encouraging development.