

## Healthcare Delivery – The Numbers

### Introduction

*The effective use and translation of health services research for public policy decision making requires a thorough understanding of the constraints and opportunities of the policy world through effective and compelling presentation of the data, analysis and policy options.*<sup>3</sup>

The Harvard University Kennedy School of Government's Mossavar-Rahmani Center for Business & Government's Health Care Delivery Policy Program hopes to transform the health care delivery non-system into a market-based service industry. Most industries have an available market survey that helps them determine the state of their marketplace. Finding we had none in medical care, we undertook a project to seek out an industry summary of "The Numbers".

The Institute of Medicine's report, *Building a Better Delivery System: A New Engineering/Health Care Partnership*<sup>2</sup> studied how knowledge discovery in databases could provide a basis for addressing system-wide issues in health care:

1. Extracting classifications, estimations, variability and predictions (e.g., characteristics that predict a patient will have a stroke before age 55)
2. Identifying high-risk patients and individualizing treatment strategies
3. Planning systems management and creating decision-support tools that can be fully integrated into health care processes
4. Forecasting health care costs and setting prices for services

To understand these issues, we need accurate and standardized data about the individuals and institutions in the community and how they utilize available healthcare delivery products. While we found many studies, surveys and analyses that compile and present statistics, there is no single body of data that examines all components of healthcare delivery for the entire United States population.

The Medicare program alone collects data from a multitude of sources, including the Medicare Current Beneficiary Survey, national claims history files, standard analytic files, final action claims data, stay records files, Part B Medicare files, Medicare provider and analysis review files, inpatient hospital and skilled nursing facility final action stay records, denominator files about each beneficiary enrolled in Medicare during a calendar year, vital status files about each beneficiary ever entitled to Medicare, group health plan master files on all beneficiaries ever enrolled in a managed care organization contracted by CMS, and various other files. *However, even with all these data collection activities, we were not able to retrieve a definitive number showing how many Americans were enrolled in Medicare for any given year* (estimates vary by 1-3 million people).

Our objectives for [The Numbers](#) project are to compile market statistics about:

- Healthcare delivery [customers by market segment](#) – **users** (consumers, patients), **providers** (hospitals, doctors, nurses, pharmacists, radiologists, etc.), **producers** (pharmaceutical companies, diagnostic equipment manufacturers, etc.) and **insurers** (government, managed care organizations, reinsurers, etc.);
- Healthcare [product](#) ("traditional" health insurance, eMedicine, single payer plan, etc.) offerings, utilization and potential interest
- [Lives covered](#) by various healthcare delivery products
- Healthcare **needs** of the population ([chronic disease incidence and prevalence](#)); and
- Healthcare delivery [costs](#) to the nation as a whole and to its segments of customers.

### Methodology

To compose *The Numbers* summaries and bibliographies, we review statistics and survey results from a variety of sources, including newspapers, magazines, newsletters, journals, books, presentations, and print and electronic reports and charts from governmental sources (National Center for Health Statistics, Centers for Medicare and Medicaid Services, etc.), non-profit agencies (Families USA,

American Heart Association, etc.), foundations (Robert Wood Johnson Foundation, Henry J. Kaiser Family Foundation, etc.) and consultants (Lewin Group, RAND, etc.). Original articles and presentations by HCDP participants are also included in the research.

Findings are entered into an EndNotes bibliographic database, with an ascension number (CS-011, DI-102, etc.) enabling research staff to provide customized reports for HCDP program participants. A [glossary](#) is included with definitions of acronyms and terms used in *The Numbers*. Summaries and bibliographies span the current five years. Spreadsheets containing archival data (from 2000+) are available to program participants by special request.

#### **Ascension Number Key**

CL	Covered Lives
CS	Customers by Market Segment
DC	Deconstructing the Costs
DI	Disease Incidence and Prevalence
HO	Healthcare Options

Original abstracts summarize article content for each bibliographic entry to include:

1. Source(s) of data (survey, researcher(s), year, methodology if included);
2. Statistic(s) reported; and
3. Variance from “generally accepted” data (if applicable), and rationale for the difference (if supplied).

*A typical bibliographic entry reads:* Soni, A. [Asthma Treatment and Management among the U.S. Civilian Noninstitutionalized Population](#), (web link to article) 2004. Rockville, MD: Agency for Healthcare Research and Quality, December 2006. (citation) (DI-232) (ascension number) According to the Priority Conditions section of the MEPS-HC 2004 (year) Full Year Consolidated Data File (survey), 9.3% of the adult U.S. civilian noninstitutionalized population (27.4 million) reported having been told by a physician at some time that they have asthma and 18.8 million people reported still having active asthma. (statistics reported).

## **Findings**

Our research has resulted in wide ranges of “numbers” that begin to demonstrate the current knowledge and reporting of healthcare market demographics and trends. Some numbers seem to be advocacy figures, many are estimates based on small-scale surveys, some show “creative” use of analysis, while others may be misinterpretations, erroneous or even fraudulent.

Unfortunately, once a number is introduced, it can permeate the public’s awareness to the point where it is universally accepted. Ask a group how many people in the US are uninsured and the majority will probably answer, “47 million”, the number most consistently reported in 2007. This phenomenon is eloquently described by University of Delaware professor Joel Best in his discussion about the generally accepted data on coconut deaths (150 individuals die each year from falling coconuts). Best states, “Who keeps track of coconut fatalities? The answer: no one. Although it turns out that the medical literature includes a few reports of injuries - not deaths - inflicted by falling coconuts, the figure of 150 deaths is the journalistic equivalent of a contemporary legend. It gets passed along as a ‘true fact,’ repeated as something that ‘everybody knows’.”<sup>1</sup>

## **Discussion**

Users of health data should be aware of the strengths and weaknesses of different types of data collection systems and surveys. One survey may use a complex, stratified, multistage probability cluster sampling design, while another may be an informal phone interview of 100 magazine subscribers. Surveys themselves often change as well, and redesign of survey questions and methodologies may affect users’ ability to track trends over time.

Following are some factors to keep in mind when working with health data:

- **Data can vary substantially** in terms of sources, methodologies, classifications, definitions and reference periods. When surveys track only the civilian noninstitutionalized population, all Americans in the military, nursing homes, prisons, etc., are excluded, and results would likely differ if those citizens were counted. National totals for two Medicaid statistical systems vary because one system includes the Northern Mariana Islands and American Samoa, while the other does not.
- **Certain populations may be over or underrepresented** in various surveys. The National Health Interview Survey (NHIS) uses screening codes to eliminate some sample households that do not contain any black or Hispanic persons and samples units in higher density black or Hispanic areas at higher rates to improve the reliability of estimates.<sup>4</sup>

- **All data collection systems are subject to error.** Records may be missing, incomplete or inaccurate. Estimates may be based on surveys with large sampling errors.
- **Some numbers are based on combinations of many studies,** which can undoubtedly cover entirely different populations. For instance, the National Health Care Survey is actually a family of surveys that collect data from providers and establishments through abstraction of medical records, completion of encounter forms, compilation of data through state and professional organizations, purchase of data from commercial abstraction services and surveys of providers.
- **Questions may not mean the same thing to different respondents,** and individuals may not understand the questions. Many patients surveyed may not know their precise diagnosis or what type of insurance they carry.

The Institute of Medicine has proposed a National Health Information Infrastructure that would be secure, reliable, adaptable and capable of connecting and supporting highly distributed, varied, independently managed, multi-tiered, intra-institutional, clinical information/communications technology systems and applications. <sup>2</sup> The Harvard University Kennedy School of Government Health Care Delivery Policy Program, by initiating this project, has taken a valuable first step in providing comprehensive information about how and where we find “the numbers” we need to make informed decisions about health care delivery. The project also serves as a starting point for discussion on how to build better systems to help policymakers formulate those decisions.

## Bibliography

1. Best, J. [More Damned Lies and Statistics: How Numbers Confuse Public Issues](#). Berkeley, CA, University of California Press, 2004.
2. Institute of Medicine. [Building a Better Delivery System: A New Engineering/Health Care Partnership](#). Washington, DC: National Academy Press, 2005.
3. Lewin LS and ME Lewin. “Presenting Information to Decisionmakers: A Guide for Policy Analysts.” [Tools for Monitoring the Safety Net](#). Agency for Healthcare Research and Quality, Rockville, MD, November 2003.
4. National Center for Health Statistics. [Design and Estimation of the 1995-2004 Survey](#), (Series 2, No. 130), June 2000.
5. [NHANES 1999-2000 Addendum to the NHANES III Analytic Guidelines](#). August 30, 2002.