

USEFUL SOURCES OF HEALTHCARE DATA, HEALTH SERVICES RESEARCH,  
AND HEALTH POLICY INFORMATION FOR ACTUARIES  
Duncan/soa/DATASETS PROJECT  
August 5, 2005

In the course of consulting engagements, actuaries almost always find they need one or more of the following resources:

- Healthcare data, which may be at the individual patient level or on a particular population
- Health services research studies which describe, summarize, try to alter, or predict patients' use of health resources
- Health policy information, which describe public or private actions which affect the access, cost and quality of medical care.

This document describes the ever-changing resources and specifies where they may be obtained. Hopefully the structure we have created will facilitate updating and supplementing these data resources periodically.

Some of the resources are free; most are available for a fee or on a subscription basis.

We assume all actuaries have high-speed access to the Internet which is how all three types of resources are obtained.

#### A. HEALTH CARE DATA

Health care actuaries presumably have access to their client's data, which usually involve medical claims and eligibility files. But for comparative studies, enhancing forecasts, devising strategies to reduce medical expenses or evaluating attempts to change patient or provider behavior, additional data are required.

The table lists the type of patient data, the organization which collects and/or disseminates the data, and the relevant website.\*

##### PATIENT-LEVEL DATA

| <u>data/patient type</u>                 | <u>source of data/name of data</u>   | <u>description/notes</u>  | <u>website</u>  |
|--|--|---|---|
| hospital inpatient; all payers           | hospitals report information on each discharge; states compile data on a quarterly or annual basis, which may be purchased from an organization in the state | 27 states collect data from hospitals on every hospital admission; variables include pt diagnoses, procedure(s), length of stay, age, sex, charges and DRG  | <a href="http://www.nahdo.org">www.nahdo.org</a>                                      |
| large sample of hospitalized patients    | Agency for Health Research and Quality   | HCUP = Healthcare Cost and Utilization Project, which is a federal-state-industry partnership. HCUP databases include the National Inpatient Sample--inpatient data from a national sample of ~1,000 hospitals; a nationwide sample of pediatric inpatient discharges; State Ambulatory Surgery Databases; and State Emergency Dept Databases for ER visits that do not result in hospitalizations. | <a href="http://www.ahrq.gov">www.ahrq.gov</a>  |
| Medicaid-inpatient and outpatient claims | Centers for Medicaid and Medicare Services   | Medicaid Analytic Extract = MAX contain patient-level data files on Medicaid eligibility, utilization, and payments.  | <a href="http://www.cms.hhs.gov">www.cms.hhs.gov</a>                                  |
| Medicare patients-inpatient admissions   | MedPAR = Medicare Provider Analysis and Review file  | data from hospitals on every Medicare beneficiary who use hospital inpatient services; variables include diagnoses, procedure(s), length of stay, disposition, age, sex, charges, DRG   | <a href="http://www.cms.hhs.gov/researchers/">http://www.cms.hhs.gov/researchers/</a> |

\* In some instances, data may be obtained from more than one source.

|  |  |   |   |
|--|--|---|---|
| Medicare patients--all sites of service              | Medicare 5% Standard Analytic File   | links all claims (for which all adjustments have been resolved) for a 5% sample of Medicare beneficiaries; patients are followed over multiple years.                                   | <a href="http://www.cms.hhs.gov/researchers/">http://www.cms.hhs.gov/researchers/</a> |
| Medicare patients--single site of service            | Medicare 100% Standard Analytic File   | Each separate file contains information on beneficiary specific use of durable medical equipment, home health, hospice, inpatient, outpatient, physician, and skilled nursing facility. | <a href="http://www.cms.hhs.gov/researchers/">http://www.cms.hhs.gov/researchers/</a> |
| medical claims for all federal employees             | Federal Employees Health Benefits Program  | medical claims submitted by ~8M federal employees and dependents  |   |
| patients enrolled in health plans (HMO, PPO, or POS) | claims data, submitted by hospitals, physicians, PBM, labs, other ancillary providers. | Insured patients' claims are adjudicated by claims processors; eligibility files often need "cleaning."   | MedStat, Ingenix, Solucient   |

SUMMARY STATISTICAL DATA/ OTHER USEFUL INFORMATION

|  |  |   |   |
|--|--|---|---|
| productivity of physicians in group practices                                  | Medical Group Management Association   | date on number of visits in group practices, by specialty   | <a href="http://www.mgma.org">www.mgma.org</a>  |
| costs of medical group practices   | Medical Group Management Association   | annual costs of group practices   | <a href="http://www.mgma.org">www.mgma.org</a>  |
| healthcare providers-- hospitals, SNFs, home health agencies                   | Centers for Medicare and Medicaid Services   | Medicare Cost Reports, submitted to CMS, usually on an annual basis. Auditing the cost reports usually causes 1-2 year time lag.        | <a href="http://www.cms.hhs.gov/researchers/">http://www.cms.hhs.gov/researchers/</a> |
| hospital statistics  | American Hospital Association  | lists the name, address, phone number, teaching programs, financial status, services offered, number of admission and outpatient visits | <a href="http://www.AHAData.com">www.AHAData.com</a>                                  |
| prescriptions written by physicians in a 2-week period                         | IMS Health   | data is summarized for different categories of pharmaceutical agents and disease/medical condition                                      | <a href="http://www.imshealth.com">www.imshealth.com</a>                              |
| Medical Device Decisions   | Centers for Medicare and Medicaid Services   | lists whether Medicare will covers (pay for) a certain medical device or procedure  | <a href="http://www.cms.hhs.gov/coverage/">www.cms.hhs.gov/coverage/</a>              |
| International Classification of Diseases (ICD-9-CM)                            | public-use software distributed by Centers for Medicare and Medicaid Services (and others) | codes for all diseases; used by all hospitals for inpatient and outpatient care   | <a href="http://www.cms.hhs.gov/researchers/">http://www.cms.hhs.gov/researchers/</a> |
| Current Procedure Terminology (CPT4) Procedure Codes                           | American Medical Association   | codes for all procedures performed by physicians  | <a href="http://www.ama.org">www.ama.org</a>  |
| prevalence and incidence rates for various cancer sites; 5-year survival rates | National Cancer Institute; SEER = Surveillance, Epidemiology and End Results               | based on data from tumor registries submitted by hospitals in certain regions of the U.S.   | <a href="http://www.nhi.nci">www.nhi.nci</a>  |

A. HEALTH SERVICES RESEARCH STUDIES AND STATISTICS

We list those journals in which, in our opinion, the most important research studies of the cost, utilization and quality appear. This list is by design **not** comprehensive.

American Journal of Public Health  
 Health Services Research  
 Inquiry  
 Journal of Ambulatory Care Management  
 Medical Care

The following medical journals often publish the most important research studies, but most of their articles are for physicians or medical researchers:

American Heart Journal  
 American Journal of Cardiology  
 American Journal of Medicine  
 Annals of Internal Medicine

Archives of Family Medicine  
Archives of Internal Medicine  
British Medical Journal.  
Journal of the American Medical Association (JAMA)  
Journal of Canadian Medical Association  
Journal of Clinical Epidemiology  
Journal of General Internal Medicine  
Lancet  
New England Journal of Medicine (NEJM)

The following journals often provide useful statistical data, though not on a scheduled basis:

Health Care Financial Management  
Health Care Financing Review  
Health Journal of Health Care Finance  
Health and Hospital Networks  
Health Care Management Review  
Health Care Management Science  
Journal of Medical Systems  
Modern Healthcare  
Business & Health  
American Journal of Managed Care  
Managed Care Quarterly

If an actuary wishes to perform a literature search, we recommend PubMed<sup>†</sup> which provides access to the abstract and citation of all health services research projects. Another resource is Google Scholar<sup>‡</sup>

#### B. HEALTH POLICY INFORMATION

Health care consulting done by actuaries is most frequently performed for private insurers. However, the health care system of the US is greatly influenced by health policy created by the U.S. Congress and state legislatures and implemented in various federal and federal agencies.

The following journals, in our opinion, provide detailed accounts of policy formulation and execution.

Health Affairs  
Journal of Health, Politics, and Law  
Milbank Memorial Fund  
Health Care Financing Review

A more thorough review of a specific policy is best found using PubMed or a news tracking service such as Lexis-Nexis.<sup>§</sup>

The following website provides information regarding Medicare coverage decisions which involve medical devices and new procedures which is recorded in the Medicare Coverage Database:

<http://www.cms.hhs.gov/mcd/search.asp>

Another organization which performs its independent assessment of new technologies is the Blue Cross/Blue Shield Technical Evaluation Center. Information on their coverage decisions is available at:

[www.bcbs.com/tec](http://www.bcbs.com/tec)

Other managed care organizations such as Aetna, United Healthcare, Cigna, Kaiser Permanente, and Anthem Blue Cross have their own staff of physicians and health economists which makes coverage decisions. Their decision-making processes are often confidential.

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<sup>†</sup> [www.pubmed.org](http://www.pubmed.org)  
<sup>‡</sup> [www.scholar.google.com](http://www.scholar.google.com)  
<sup>§</sup> [www.lexisnexis.com](http://www.lexisnexis.com)