Comparative Health System Performance Initiative: Compendium of U.S. Health Systems, 2016, Technical Documentation

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Appendix A. QuintilesIMS/SK&A and AHA Methodologies

Note: The information in this appendix is based on (1) a conversation with QuintilesIMS on May 19, 2017 and (2) Cohen GR, Jones DJ, Heeringa J, et al. Leveraging diverse data sources to identify and describe U.S. healthcare delivery systems. eGEMs, vol. 5, no. 3, December 2017.

QuintilesIMS maintains two integrated databases relevant to the study of health system performance under the umbrella of Healthcare Relational Services (HCRS). The first, the Healthcare Professional Services (OneKey Professionals) database, focuses on health professionals (for example, physicians, residents, and physician extenders, such as nurses and physician assistants) and contains health care administrators.

QuintilesIMS maintains OneKey Professionals by using manual stewardship and updates from industry source data (including American Medical Association, CMS' National Plan and Provider Enumeration System [NPPES], State Controlled Substance Registration, Drug Enforcement Administration [DEA] identifier, and other established industry source data). OneKey Professionals providers are integrated into the Healthcare Organization Services (HCOS), also known as OneKey Organizations database, the second of the two OneKey databases.

The providers in OneKey Professionals are bridged to the organizations in OneKey Organizations as provider affiliations via a combination of a proprietary address intelligence algorithm and manual stewardship, in which individual provider addresses are processed against organizations in OneKey Organizations through established business rules to create a provider affiliation.

Organizations in OneKey Organizations are manually identified or identified using the Drug Distribution Data (DDD) nonretail shipping address. OneKey Professionals addresses are run through proprietary address intelligence software and given a rank from negative 5 to 10. A rank of 6 or higher triggers an attempt to match to organizations in OneKey Organizations.

Most professionals in OneKey Professionals will have at least one address with a score of 6 or higher. Of the approximately 8.1 million professionals in OneKey Professionals, about 2.5 million have an association with an organization in OneKey Organizations. OneKey Organizations contains information on approximately 650,000 medical group practices, hospitals, accountable care organizations (ACOs), and other organizations. Fields include organizational characteristics such as bed count, provider counts, health information technology infiltration, and finances.

OneKey Organizations is periodically verified via telephone; the timing of verification calls varies by organization type. Each time a medical group practice is verified, so too are the providers within that group. For hospital verification, QuintilesIMS confirms with hospitals that their website is up to date. Then, QuintilesIMS uses web-based information to determine which providers are affiliated with that hospital. They also break down affiliation types for physicians' relationships to hospitals—attending or admitting. All relationships between organizations in OneKey Organizations are researched and the relationship is verified with both entities to confirm that a relationship exists and to determine the nature of the relationship.

SK&A, recently acquired by QuintilesIMS, is a private provider of U.S. healthcare reference information that creates lists of physicians, hospitals, ACOs, and other health care providers. The physician database specifically profiles physicians and other office-based prescribers, including residents.

SK&A processes data from DEA registration files, NPPES, and company and corporate directories to identify existing providers. Information is validated through phone calls to practice site locations every six months, and the database is updated on a rolling basis. SK&A databases are primarily designed to support marketing by providing information about medical groups but are increasingly used for research purposes. The SK&A database contains 800,000 active office-based physicians, including residents.

SK&A defines an integrated health system based on common ownership or management of groups, hospitals, and other health care facilities by a common corporate entity. SK&A uses both a bottom-up and top-down approach to identify health systems. For the bottom-up approach, SK&A calls medical group practice sites[i] and enumerates physicians, identifies hospitals in which physicians within the practice have admitting privileges, and asks about hospital or health system ownership of the practice. This approach is augmented by a top-down approach in which SK&A searches health system websites, trade publications, and other sources for health system information. The physician database includes a number of descriptive variables, such as location, size, and adoption and use of health information technology.

AHA fields an annual cross-sectional survey of the more than 6,400 U.S. hospitals; the survey typically has a response rate of more than 80 percent. The objective of the survey is to track and monitor the evolution of new systems of care, care coordination functions, and various payment models used in providing care to a population as they are experienced by hospitals. Data are supplied by hospital administrators online, as well as by paper and pencil. Although the survey has a cross-sectional design, the unique hospital identifier (AHA ID) can be used for cohort studies to monitor changes in hospitals over time. Data from the survey are stored in the AHA Annual Survey Database.

The AHA survey provides several mechanisms for identifying health care delivery systems. The data may be used to identify horizontally integrated hospitals, identify hospitals that have vertical relationships with physicians, and characterize the nature of these relationships in a health system taxonomy. The relationships include hospital affiliations with physicians through integrated salary models or equity models; medical group or physician ownership of hospitals; hospital participation in foundation models; and hospital-physician alignment through management services organizations and physician hospital organizations. In creating the list, we used a system membership variable that identifies multihospital and diversified single hospital health care systems.

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[i] A medical group practice comprises three or more physicians formally organized in a business entity that shares equipment, records, and personnel in the provision of patient care and in business management.