

Comparative Health System Performance Initiative: Compendium of U.S. Health Systems, 2021, Home Health Care Organization Linkage File, Technical Documentation

Prepared for:

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Rockville, MD 20857
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Contract Number: 47QRAA18D00BQ/75Q80123F80002

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AHRQ Publication No. 24-0056
July 2024



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Acknowledgments

We would like to acknowledge a number of organizations and individuals who provided support and guidance during the development of the Compendium of U.S. Health Systems, 2021, Home Health Care Organization Linkage File:

- Agency for Healthcare Research and Quality: Dan Miller, Leeann Comfort, Jay Crosson, Lingrui Liu, Mike Furukawa, Bruce Seeman, and Doreen Bonnett
- Data vendors: IQVIA™
- Mathematica staff: Miaomiao Shen, Andrew McGuirk, Emily Hauge, and Michael Barna

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I. Introduction

In 2015, the Agency for Healthcare Research and Quality (AHRQ) created the Comparative Health System Performance (CHSP) Initiative to study how healthcare systems promote evidence-based practices in delivering care.ⁱ AHRQ's goal is to understand the factors that affect health systems' use of patient-centered outcomes research (PCOR) and identify best practices in disseminating and using PCOR.

AHRQ supports the ongoing work of the CHSP Initiative by providing this Compendium of U.S. Health Systems, a list of health systems in the United States, with details about their structure, staffing, and program participation. The Compendium is available on the AHRQ website: <https://www.ahrq.gov/chsp/index.html>.

As part of the CHSP Initiative, AHRQ and Mathematica developed a series of publicly available data resources for researchers, policymakers, and other stakeholders who want to understand how health systems can improve the value of healthcare. These data resources include the 2016, 2018, 2020, 2021, and 2022 Compendium of U.S. Health Systems and hospital linkage files, along with the 2016 and 2018 group practice linkage files.

AHRQ developed the health system data files (referred to as the systems list in this document) using information from several data sources that identify systems and their members. In addition to the names and locations, the systems list includes characteristics such as the number of physicians, hospitals, and nursing homes in the system and the number of hospital discharges from system hospitals.

AHRQ also created files linking health systems with their member home health care organizations (referred to as the "home health care organization linkage files" in this document). These linkage files include identifying information for home health care organizations, such as their name, street address, city, state, and ZIP Code. The files include the Centers for Medicare & Medicaid Services (CMS) Certification Number (CCN). In addition, the files include the health system name and Compendium health system ID for home health care organizations linked to health systems in the systems list.

The home health care organization linkage files are publicly available so users can identify home health care organizations within health systems and then link to other data sources to examine aspects of their performance, such as cost and quality of care.

This document summarizes the approach taken to create the 2021 home health care organization linkage file. In Section II, we summarize the data sources used to create the file. Section III describes the methodology used to create the file. In Section IV, we describe the variables contained in the linkage file. Finally, Section V describes caveats that should be considered when using the home health care organization linkage file.

ⁱ Additional information on the CHSP Initiative can be found at <https://www.ahrq.gov/chsp/index.html>.

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II. Data Sources

We use the IQVIA OneKey data to identify home health care organizations in the United States and their links to health systems in the systems list. The OneKey data include frequent updates of information on health systems, physicians, advanced practice clinicians, and healthcare facilities nationwide, including hospitals, clinical practice sites, nursing homes, and home health care organizations.

The data come from a combination of telephone surveys and administrative sources. They contain system- and organization-level identifying information such as name, location, and unique OneKey identifiers to link records over time, as well as other unique external identifiers such as CCN, which can be used to link facilities to external data sources.

Most importantly for the purposes of creating the home health care organization linkage file, the OneKey data also describe relationships between healthcare providers and other organizations via ownership, management, leasing, purchasing, and contracting mechanisms. In particular, the data indicate relationships between health systems included in the systems list and home health care organizations. We use this information to identify the links between the organizations and health systems to create the home health care organization linkage file.ⁱⁱ

ⁱⁱ An overview of the OneKey data collection methods is available in the Compendium of U.S. Health Systems, 2021, Technical Documentation at <https://www.ahrq.gov/chsp/data-resources/compendium.html>.

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III. Methodology

We use the OneKey data to identify home health care organizations and their links to health systems and other corporate parents. In addition, to provide a relatively well-defined and consistent set of home health care organizations that can be linked to external data sources and linked internally across these files over time, we restrict the OneKey data to records with a CCN.^{iii,iv}

According to the OneKey documentation:

[A] home health organization (COT 90) provides home-based health care services to patients with a medical illness, chronic medical condition, or a disability. The most prevalent home-health services include skilled-nursing care, home-infusion therapy, rehabilitation services, respiratory care, and nutritional therapy. Home-health facilities may specialize in hospice care (COT 92) and home dialysis services (COT 241).

Home health organizations (COT 90), hospice care organizations (COT 92), and home dialysis organizations (COT 241) compose the overall home health care organization category. The 2021 OneKey data contain 12,544 home health care organizations with CCNs, of which 9,652 are identified as home health organizations, 2,514 are identified as specializing in hospice care, and 378 are identified as specializing in home dialysis.

The OneKey data identify relationships between home health care organizations and corporate parents (for those that have a corporate parent). Health systems (referred to as integrated delivery networks [IDNs] in the OneKey data) are one type of corporate parent identified in the data, and each health system has a unique OneKey ID. Because the systems list was developed using the OneKey data, it also includes this unique OneKey ID. Thus, we link the home health care organizations and their health systems to the systems list using the unique OneKey IDs.

Some smaller, geographically defined health systems (subsystems) are nested within larger systems (parent systems). In the systems list, we aggregate the information for subsystems under their parent systems and only report the information for the parent systems. Similarly, in the home health care organization linkage file, we report the parent system information for home health care organizations linked to subsystems.

ⁱⁱⁱ We excluded 18,020 home health care organizations from the linkage file that did not have a CCN in the OneKey data.

^{iv} We excluded CCNs that contained the alphanumeric grouping of G001-G999, which indicates the records are for Intermediate Care Facilities for Individuals with Intellectual Disabilities (ICF/IID). This step resulted in three records being excluded.

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IV. Home Health Care Organization Linkage File Contents

The home health care organization linkage file contains 12,544 home health care organizations. Of those, 1,033 home health care organizations (8%) were affiliated with 346 Compendium health systems. Of the 2,514 home health care organizations specializing in hospice care, 354 (14%) were affiliated with 170 Compendium health systems. Two of the 378 home health care organizations specializing in home dialysis (1%) were affiliated with two Compendium health systems.

The home health care organization linkage file contains 16 variables, including each home health care organization's name, location (address, city, state, and ZIP Code), and a unique home health care organization ID assigned as part of the development of the Compendium. The unique home health care organization IDs are assigned to organizations based on their CCN. These IDs can be used to track home health care organizations in the linkage files across years.

The data file includes a variable for home health care organization type, which identifies (1) general home health care organizations, (2) those that specialize in hospice care, and (3) those that specialize in home dialysis.

The home health care organization linkage file contains three linking variables. Medicare CCN (ccn) can be used to link home health care organizations to external data sources, such as home health care agency data from CMS Care Compare.^v The OneKey ID (onekey_id) can be used to link home health care organizations to OneKey data. The unique health system identifier (health_sys_id) can be used to link the home health care organizations to the systems in the Compendium of U.S. Health Systems. If applicable, the linked Compendium health system ID, name, city, and state are also included in the file.

The home health care organization linkage file also contains variables that identify the corporate parents of home health care organizations. These variables include the corporate parent name (corp_parent_name), corporate parent OneKey ID (corp_parent_id), and corporate parent type (corp_parent_type). Two types of corporate parents are noted: health systems (IDNs) and corporate owners.^{vi} When a home health care organization has corporate parent information reported in the linkage file but does not report a Compendium health system, it means the corporate parent is a corporate owner or an IDN that was determined to not meet the definition of a health system for the Compendium.

Section V.A includes the definition of a health system for the Compendium and summarizes the exclusion criteria used to identify systems meeting this definition. More detailed information on how we use the definition to identify Compendium systems is available in the Compendium of

^v The CMS data can be downloaded at <https://data.cms.gov/provider-data/archived-data/home-health-services>.

^{vi} According to OneKey documentation, a corporate owner is “an organization that owns, leases, manages, or establishes strictly a purchasing affiliation with two or more healthcare delivery sites, but does not offer a continuum of healthcare. This is because the organization does not include at least one acute care hospital and one nonacute organization.”

U.S. Health Systems, 2021, Technical Documentation at <https://www.ahrq.gov/chsp/data-resources/compendium.html>.

Differences between (nonmissing) information provided for the corporate parent and Compendium health system information may exist because:

- The corporate parent identified in the OneKey data is determined to be a subsystem of a Compendium health system. In these cases, the corporate parent information reflects the subsystem, and the Compendium system information reflects the parent system.
- Slight differences appear in the corporate parent name and the Compendium health system name. In these cases, the corporate parent information reflects the health system name from the OneKey data. The Compendium health system name reflects a slight cleaning of the system name, or it is based on other data sources used to develop the systems list.

Appendix A contains a data dictionary for all variables included in the home health care organization linkage file.

V. Caveats and Limitations

This home health care organization linkage file enables users to link Compendium health systems with their member home health care organizations. When using the file, users should bear in mind a few caveats and limitations to the current methods for assigning home health care organizations to health systems.

A. Definition of a Health System

The Compendium definition of a health system follows:

A health system includes at least one hospital and at least one group of physicians that provides comprehensive care (including primary and specialty care) who are connected with each other and with the hospital through common ownership or joint management.^{vii}

This definition is further operationalized as requiring that a health system:

1. Include at least one non-Federal acute care hospital,
2. Include, in total, at least 50 physicians, and
3. Include at least 10 primary care physicians.

If an organization does not meet the definition of a Compendium system, then affiliated home health care organizations are not identified in the home health care organization linkage file as part of a Compendium system. In addition, the Compendium systems linked to home health care organizations in the linkage file are parent systems; relationships between home health care organizations and subsystems are not directly identified in the Compendium system variables. Relationships with organizations not considered Compendium health systems may be identified in the corporate parent variable, as discussed in Section IV.

B. Reliance on IQVIA OneKey Data

Two health systems in the Compendium systems list are not found in the OneKey data and therefore have missing data for home health care organizations (Table V.1). In addition, the home health care organization linkage file relies on the set of home health care organizations and relationships to health systems identified in the OneKey data. These may not capture all home health care organizations or all relationships between these organizations and health systems nationwide.

Table V.1. Compendium systems with no OneKey data affiliated home health care organizations in the linkage file

Compendium System ID	System Name
HSI00000116	Blanchard Valley Health System
HSI00000715	Munson Healthcare

^{vii} Foundation models of health system organization are considered a form of joint management. Joint participation in an accountable care organization does not by itself indicate joint management. In addition, “group” is not synonymous with a separately organized medical group. A hospital that employs community-based physicians who provide comprehensive care (but are not organized as a medical group) would be considered a health system.

In addition, when comparing the home health care organizations linkage file with external data sources, it is important to note that the definition used to identify home health care organizations in the OneKey data is different than the definition of home health agencies CMS uses. CMS identifies home health agencies as those providing skilled nursing services and other therapeutic services (such as physical therapy and speech therapy).^{viii}

In contrast, the OneKey data include organizations licensed to treat individuals in their home, which includes care such as respiratory care, infusion therapy, and nonmedical, personal care. Furthermore, the OneKey data also include organizations specializing in home dialysis and hospice care, which CMS would not count as home health agencies. These differences lead to different numbers of organizations included in the two datasets. The 2021 OneKey data include 12,544 home health care organizations, while the 2021 CMS data identify 11,176 home health agencies.^{ix}

C. Mergers and Acquisitions

The linkage file reflects home health care organizations in the United States at the end of 2021. However, lags may occur in updating changes to systems and their home health care organizations. Some mergers, acquisitions, and name changes that occurred before the end of 2021 may not be represented.

^{viii} More detail on CMS's definition of home health agencies can be found at <https://www.cms.gov/medicare/health-safety-standards/guidance-for-laws-regulations/home-health-agencies/home-health-providers>.

^{ix} Of the 11,176 home health agencies in the 2021 CMS data, 7,641 (68%) had CCNs with matches in the 2021 OneKey data. Of the 12,544 home health agencies in the 2021 OneKey data with a CCN, 7,641 (61%) had CCNs with matches in the 2021 CMS data.

Appendix A. Data Dictionary – Home Health Care Organization Linkage File

Variable Name	Variable Type	Description
compendium_hhco_id	Character	Unique home health care organization ID (assigned as part of the development of the linkage file; links to other years of the home health care organization linkage file)
onekey_id	Character	OneKey home health care organization ID
ccn	Character	CMS certification number
home_health_org_type	Character	Home health care organization type (home health, hospice, or home dialysis)
home_health_care_org_name	Character	Home health care organization name
home_health_care_org_street	Character	Home health care organization street address
home_health_care_org_city	Character	Home health care organization city
home_health_care_org_state	Character	Home health care organization state
home_health_care_org_zip	Character	Home health care organization ZIP Code
health_sys_id	Character	Unique Compendium health system ID (assigned by the CHSP Initiative) of the system linked to the home health care organization (same variable as in the Compendium of U.S. Health Systems)
health_sys_name	Character	Health system name (same variable as in the Compendium of U.S. Health Systems)
health_sys_city	Character	Health system city (same variable as in the Compendium of U.S. Health Systems)
health_sys_state	Character	Health system state (same variable as in the Compendium of U.S. Health Systems)
corp_parent_id	Character	OneKey ID for corporate parent linked to the home health care organization
corp_parent_name	Character	Corporate parent name
corp_parent_type	Character	Corporate parent type (health system or corporate owner)