

The Collection and Release Practices of Physician Identifiers in Statewide Hospital Discharge Data Reporting

A NAHDO White Paper
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Alan Prysunka, and Barbara Rudolph

THE NATIONAL ASSOCIATION OF
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Executive Summary

The demand for quality and cost information by healthcare purchasers, policy makers, and consumers is growing, out-pacing the capacity of existing databases and sources to supply the desired information. Hospital performance reports have become more widely available over the past decade, but data and information about physicians continues to be scarce. Yet, in some respects, physician data is probably the more important of the two, given that it's the physician who generally determines which hospital will provide care to the consumer. Consumers select their physician first, and then, when necessary, use the hospital(s) where the physician has been credentialed. Thus, for consumers, having information to help them select their physician is critical. Purchasers and policy makers also understand that the physician drives the care delivery and makes choices that determine the cost of care.

Statewide hospital discharge data is a source of physician-level information, but this data poses some limitations. Hospital data with physician identifiers can only provide details on the care delivered within the hospital setting and not on the entire care cycle. In addition, if the physician practices on a state border, the results of their total hospital practice may be incomplete without a merger of data from the other state(s). In some states, physicians may have enough political clout to stop release of the data, resulting in underutilization of the hospital discharge data physician reporting applications. Despite these limitations, discharge data with physician identifiers can be very useful for cost, quality, and access applications.

This paper, researched and written by the National Association of Health Data Organizations (NAHDO) and funded by the California HealthCare Foundation (CHCF), discusses the opportunities and challenges associated with the use of hospital discharge data for physician-level reporting. NAHDO's intent is two-fold: 1) states that don't currently collect or utilize physician identifiers will evaluate and add physician data, and 2) states that do collect physician identifiers will update their current collection and release practices. The report provides an overview of the collection and use of physician-level data in hospital discharge databases and summarizes state collection and release practices.

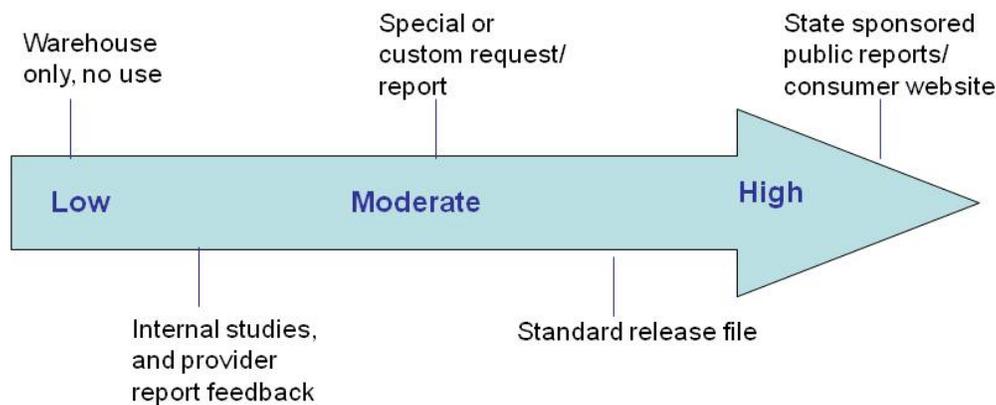
NAHDO conducted online research of state data agency information and conducted interviews of data managers in the health data agencies of every state in the United States and the District of Columbia in June and July, 2010. Preliminary findings from these interviews and experiences from a leading healthcare information agency, Virginia Health Information, were presented in a webinar on July 14, 2010.

Findings

The release and use of physician-level information varies across states, from some states having no release/warehouse of the fields to others where agencies produce physician quality reports. State collection practices related to physician identifiers are becoming more uniform, facilitated by the content standards in the UB-04 (the Uniform Bill form that many states now use as a data collection format). Out of the 48 states with hospital discharge data reporting programs, 46 collect physician identifiers for attending and operating physicians, and, in some states, other physician types.

The two states with hospital discharge data reporting that do not collect physician fields are Wyoming and California. The Wyoming Hospital Association collects the discharge data from its member hospitals who voluntarily submit the data, and has plans to add physician identifiers as a field for voluntary submittal in 2012. California is one of 40 states with a legislative mandate to collect health care data. The state data agency that maintains the hospital discharge databases is the California Office of Statewide Health Planning and Development (OSHPD), which is assessing the feasibility of adding

Release Practices



additional data elements, including physician fields, under its current statutory authority.

States that release physician-level data have experienced little opposition and have found that physician stakeholder concerns could be addressed by adopting practices such as engaging with physician groups through advisory committees, providing review and comment periods for the data requests, and working with physician stakeholders on pilot studies—that is, pre-public reports releasing physician identifiers, and focused reports back to the physician providers. Consumers, and sometimes policy

makers, have concerns about patient confidentiality, yet none of the states that make physician identifiers available for release reported that there had ever been a breach of patient confidentiality. States producing physician quality reports have established a roadmap that other states could follow in terms of overcoming the technical and political challenges related to the release of this information. These states have addressed issues of data validity and assignment of physician attribution, including the use of pilot reporting studies and provider review and validation periods. Using these states as models for best practice, other states may want to replace their de facto framework for how to report physician-level data using hospital discharge data sets.

Based on this study and decades of experience working directly with states collecting and releasing statewide health care data and information, NAHDO recommends the following actions for improving the collection and use of physician identifiers in state data sets:

- States should learn from states that are collecting and releasing physician-level data and work with their stakeholders to find a collection and release solution that aligns with their needs.
- Health data agencies should collect physician identifiers with hospital discharge data submissions.
- The data should be captured using national standards and formats.
- States that collect physician identifiers with hospital discharge data should release the fields in standard releases and research files. Agencies should work with stakeholders to craft release policies and products that align with the state's legal and political environment. Each state has unique confidentiality rules, and physician sentiment varies across states around public reporting.
- States collecting physician fields should work with medical societies, providers, and other stakeholders to produce consumer-oriented public reports.
- The physician fields in the national standards need to be improved. NAHDO and states should explore the feasibility of expanding the physician fields in the UB standards to include an operating physician field for each procedure code.
- Federal agencies such as AHRQ should work with NAHDO and states to develop analytic methods and tools for physician-level reporting based on hospital discharge data. As we learned with the AHRQ QIs, open source methods and measures will reduce the analytic costs to a single data agency, expand public reporting initiatives, and generate uniform benchmarks.

State health data reporting systems are well-positioned to drive system improvements by making physician-level data available for multiple purposes, but many are falling short in their collection and release policies. Physician-level reporting is where hospital quality reporting was many years ago. Over the last decade, states have become more uniform in the release and use of hospital-level information for public disclosure as demand for health information has increased. Consumer utilization of internet health information is experiencing significant growth: in just six years the number of consumers seeking health information has grown by 56 percent¹. The populations most active in seeking health information are heavy users of physician care, such as those with chronic conditions, and women who coordinate

¹ Ha T. Tu and Genna R. Cohen, *Striking Jump in Consumers Seeking Health Care Information*, Center for Studying Health System Change, results from the community tracking study, no. 20 (Aug 2008).

care for others and for themselves.² In addition, groups like the Consumer-Purchaser Disclosure Project³ and Consumers Union⁴ are advocating for greater transparency of physician care. On the purchaser side, on June 25, 2010, the Centers for Medicare and Medicaid (CMS) announced changes to the Physician Quality Reporting Initiative (PQRI) program which included the establishment of a “Physician Compare” website.⁵ We can expect that state data systems will also be called upon by their stakeholders to increase physician-level data release as interest in health information continues to grow among consumers and purchasers

² Ha T. Tu and Genna R. Cohen, *Striking Jump in Consumers Seeking Health Care Information*, Center for Studying Health System Change, results from the community tracking study, no. 20 (Aug 2008).

³ The Consumer-Purchaser Disclosure Project, a joint effort of purchasers and consumers, has embraced a vision of a transparent health care market, in which decision-making is supported by publicly-reported comparative information. The Consumer-Purchaser Disclosure Project is housed at the Partnership for Women and Families, a nonprofit, non-partisan advocacy group founded in 1971.

⁴ Consumers Union is the publisher of *Consumer Reports*, an independent, nonprofit testing and information organization serving only consumers.

⁵ Changes to the Physician Quality Reporting Initiative and the Electronic Prescribing Incentive Program., CMS Fact Sheet, released June 25, 2010.

The Collection and Release Practices of Physician Identifiers in Statewide Hospital Discharge Data Reporting Systems

Introduction

Although the demand for quality and cost information on physician providers is growing, and measure development efforts have increased, there is not sufficient access to data in the public domain. Hospital performance reports have become more widely available over the past decade, but data and information about physicians continue to be scarce. Policy makers and industry leaders are seeking solutions for filling these data gaps, including looking for ways to expand the ability of existing data sets to support emerging information needs in a more cost-effective manner. The pressure to report quality information about physicians will increase as policy makers, purchasers, and the public increasingly expect accountability in, and public disclosure of, health care provider performance outcomes at all levels of the industry.

States with hospital discharge databases are well-positioned to meet emerging information needs, including physician-level reports, as these databases typically include information on physicians. Many states make physician data available in standard release files (also known as public use files) that are de-identified, and in research files that contain some sensitive data elements. Several states have come up with solutions that resolve the concerns of physicians and the technical challenges related to the public release of physician-level quality reports. These states can serve as roadmaps for other states seeking to expand the utility of their hospital discharge data systems.

This paper, researched and written by the National Association of Health Data Organizations (NAHDO) and funded by the California HealthCare Foundation (CHCF)⁶, discusses the opportunities and challenges associated with the use of hospital discharge data for physician-level reporting. It is our hope, based on the information and recommendations contained within this report, that states will be better able to evaluate and update their current collection and release practices.

This report provides an overview of the collection and use of physician-level data in hospital discharge data bases and covers the following topics:

- Description of hospital discharge databases
- National standards for the collection of physician identifiers with hospital discharge data
- Collection practices of physician identifiers by state agencies
- Release of physician identifiers by state agencies
- Major concerns and challenges associated with the collection and use of physician identifiers
- Recommendations for state agencies

⁶ The California Healthcare Foundation is a nonprofit organization that supports ideas and innovations that improve healthcare quality, increase efficiency, and lower the cost of care.

Background

Physicians drive decisions about health care use and are the gatekeepers of high-cost care.⁷ Physicians admit patients to hospitals, prescribe drugs and interventions, and perform surgeries. Physicians also have an impact on cost of care, length of stay, complication rates, and readmissions.^{8 9} Despite the central role played by physicians in health care delivery, very little information exists on physician practices and their outcomes. Although information about physicians is desired by policy makers, purchasers, consumer advocates, and the industry, physician-level information is very difficult to obtain.

Payers receive detailed claims experience for physicians under contract, but the data reveals information about treatment patterns for a single payer's enrollees, which is just a portion of patients treated by a given physician. It is unlikely that, in any health plan, except perhaps Medicare or a staff model health management organization (HMO), a single physician's patient numbers would be large enough to analyze. Even when there is data that includes adequate numbers of patients, the information on physicians is rarely released to the public. Hospitals track the experience of physicians credentialed to treat patients in their hospital and/or health system, but, again, this does not reflect the entire scope of a physician's practice at other hospitals, nor does it provide information to consumers.

It is difficult to collect data directly from physicians' offices. The lack of physician office capacity to report electronically limits the numbers of physicians from whom data collection is possible and thereby reduces the utility of physician-level data if a state were able to capture it. Because of these significant obstacles, states will likely continue to seek physician-level data through other aggregated data sources. The electronic medical record (EMR) holds promise as a future source of clinical and health care information, but currently EMR data are not structured sufficiently for large-scale aggregation and reuse of the data for cost, quality, and access studies. Meaningful use incentives are expected to drive hospital information system vendors to develop and extract clinical data for measures and to integrate their data with other data sets. Another emerging data source, All Payer Claims Databases (APCD), does capture physician encounter data, and complements statewide hospital discharge data, but APCDs are fully implemented in only a handful of states. Despite the challenges, physician data and information will continue to be important to state and national policy makers as well as to the industry.

In 2001, the Institute of Medicine (IOM) report "Crossing the Quality Chasm: a New Health System for the 21st Century"¹⁰ defined a framework for measuring health care quality and how to improve broken systems of care. The IOM described quality health care as care that is:

- **Safe**—avoiding injuries to patients from care that is intended to help them;
- **Timely**—reducing waits and sometimes harmful delays;

⁷ Lawton R. Burns, Jon A. Chilingierian, and Douglas R. Wholey, "The Effect of Physician Practice Organization on Efficient Utilization of Hospital Resources," *HSRP Health Services Research* 29:5 (Dec 1994).

⁸ A.D. Auerbach, J.F. Hilton, J. Maselli, P.S. Pekow, M.B. Rothberg, and P.K. Lindenauer, "Case Volume, Quality of Care, and Care Efficiency in Coronary Artery Bypass Surgery," *Arch Intern Med* 170:14 (July 26, 2010): 1202-8.

⁹ Burns et al., op cit.

¹⁰ Institute of Medicine, *Crossing the Quality Chasm: a New Health System for the 21st Century*, a consensus report (2001).

- **Effective**—providing services based on scientific knowledge and refraining from services not likely to benefit;
- **Efficient**—avoiding waste;
- **Equitable**—providing care that does not vary regardless of personal characteristics; and
- **Patient-centered**—providing care that is respectful or responsive to individuals’ needs.

These domains are used to organize and prioritize national standardized quality measures and can serve as a guide for states in shaping data collection and measurement policies. In the context of physician measures, we suggest the physician measurement software applications be developed relative to the six IOM domains. Table 1 below suggests how physician-level data can be applied to address associated key IOM quality domains.

Table 1. Institute of Medicine Quality Framework

IOM Quality Domains	Examples Applied to Physician-level Data
Safe	Safety improvement when physicians receive feedback and benchmarks to better target their quality improvement activities.
Timely	Use by Emergency Department (ED) physicians of new measures for reporting on timeliness of physician services within ED.
Effective	Underuse and over-use can be determined by evaluating variation in procedures, laboratory testing, use of imaging, and diagnostic and screening actions.
Efficient	Tracking of resource use and quality outcomes across providers and systems.
Equitable	Granular evaluation of disparities, examining of care delivery by physicians for chronic and other target conditions and populations.
Patient-centered	Public availability of physician information such as volume via elective procedures for consumer education and choices.

In the absence of national and state sources for physician-level health care data, states would look to existing data systems with the capacity to support physician-level measures and information, such as hospital discharge databases.

What Are Hospital Discharge Databases?

Statewide hospital discharge databases contain patient demographic, financial, and hospital utilization information in relatively uniform formats, and capture this information on all patients and all payers (including uninsured) from all acute care providers in a state. The discharge databases are maintained by forty-eight states and jurisdictions.¹¹ Some of the state reporting programs have existed for forty years

¹¹ Alabama, Idaho, and North Dakota do not have statewide inpatient hospital discharge reporting datasets. North Dakota has a mandate, but since 2005 it has not reported due to lack of resources.

and are maintained by public or private health data organizations that serve as the data aggregator and data steward. Today, these databases are widely available and are the primary source of information for health services researchers, public health surveillance, and those developing hospital quality reports. They are used by the industry and policy makers to inform decisions about health care cost, quality, and access.

Hospital discharge data sets are not without limitations. They lack clinical details such as laboratory results, they do not capture outpatient encounters where the majority of care is provided, and coding practices vary across hospitals. Despite these limitations, their value for cost, quality, and access applications have been demonstrated, and they are an important data source for many market, policy, research, and consumer applications.

National Standards for the Collection of Physician Identifiers with Hospital Discharge Data

Before assessing the state data collection practices of hospital discharge data systems, it is important to first understand national standards and their relationship to state collection policies and regulations. Because hospital data sets are based on national billing standards, state health data agencies and NAHDO has been actively involved in shaping these national standards to support state and public health data needs. As a result, these data are fairly comparable across providers and across states, although some states, like California, have adapted or adopted a state-specific format to meet local information needs.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) introduced content and transaction standards for institutional and professional claims. The National Uniform Billing Committee (NUBC) is the entity charged with establishing the content standards for institutional (hospital-based) claims, or Uniform Bill (UB). The UB-04 is the current standard, or version, of the institutional claim used for provider reimbursement from payers, and is more flexible than previous versions, permitting states to collect the information they need in a standardized way. The transaction or messaging standards for claims, set by the American National Standards Institute (ANSI), is ANSI X12 837. This is an electronic standard that is consistent with the UB standards and allows for more characters than the paper-based UB form.

The UB standards include fields for the identification of the following physician types:

- *Attending Provider* (the individual who has overall responsibility for the patient's medical care and treatment reported in this claim)
- *Operating Physician* (the individual with primary responsibility for performing the surgical procedure(s) and required when a surgical procedure is listed)
- *Other Operating Physician* (the individual performing a secondary surgical procedure or assisting the Operating Physician)

The fields that identify these physician types are as follows:

- **Primary Physician Identifier:** The National Provider Identifier (NPI) is a HIPAA Administrative Simplification Standard. The NPI is a unique identification number for covered health care providers. Covered health care providers and all health plans and health care clearinghouses must use the NPIs in the administrative and financial transactions adopted under HIPAA. The NPI is a ten-position, intelligence-free numeric identifier (ten-digit number). This means that the numbers do not carry other information about healthcare providers, such as the state in which they live, or their medical specialty. The NPI must be used in lieu of legacy provider identifiers in the HIPAA standards transactions. The NPI replaced the Unique Physician Identification Number, a six digit alpha-numeric identifier formerly used by the Centers for Medicare and Medicaid Services which was discontinued in the second quarter of 2007.
- **Secondary Identifier:** Usually this field includes the State License Numbers (SLN). Physician SLNs are usually assigned by individual state departments of licensure or a specified government-approved professional association. Typically, states maintain a database of all physicians licensed within their state that contains information on the physicians' demographics and specialties.
- **Physician Name (Last, First):** These are 16 and 12 character fields, respectively, for the provider names, if known.

States capturing some or all of these fields with their discharge data submissions can leverage this information into information and products important to their stakeholders and to the public.

Study Methodology

NAHDO first conducted online research of each data agency's information, including provider submission manuals and public use/standard release file data elements. (Not all agencies make this information available online.) Next, NAHDO reviewed the agency's products and reports, noting any physician-level reports. This information was used to update NAHDO's inventory of agency practices. NAHDO relied on its national network of health data organizations to update and verify the information contained in this white paper during June and July of 2010.

Using an interview discussion guide, key informant interviews were conducted with the agency staff person(s) identified as the most knowledgeable about the physician fields in the database in 48 health data agencies. There was a 100 percent response rate to this survey. All but five interviews were conducted by telephone, with these states responding in writing to email surveys. NAHDO followed up with phone and email respondents to clarify or request additional information as necessary. It should be noted that some respondents could not answer every question in the discussion guide, most often because the respondent did not have the institutional knowledge on the political debates about physician identifiers prior to his or her tenure at the agency. Respondents were asked to during the interview to refer NAHDO to other stakeholders (for example, representatives from physician societies and hospitals) we could interview to gather additional information on support and opposition to collection and release of physician identifiers in their state. We did not receive any referrals, either because there were no current issues or concerns that warranted an interview, or because it was not deemed necessary to revisit issues that were long ago resolved.

The key domains/topics covered during the interviews which lasted on average half an hour were:

1. Collection and release practices of physician identifiers with hospital discharge data
2. Opposition to and support of collection and release of physician identifiers with hospital discharge data
3. Use of physician identifiers for internal purposes and public reporting
4. Lessons learned relating to the collection, release, and use of physician identifiers

Preliminary findings from these interviews and experiences from a leading agency in use and release of physical identifiers, Virginia Health Information, were presented in an invitation-only webinar on July 14, 2010, titled "Collection and Use of Physician Identifiers with Inpatient Hospital Data." Twenty health data organizations participated, as well as representatives from the Pacific Business Group on Health, and CHCF.

Findings

Overall, we found that state collection practices related to physician identifiers are becoming more uniform, facilitated by the content standards in the UB-04 that many states now use for a data collection format. There remains large variation in how states use the physician data elements they collect, however, reflecting the differing barriers to public reporting across states. The following sections summarize current health data agency collection and release practices.

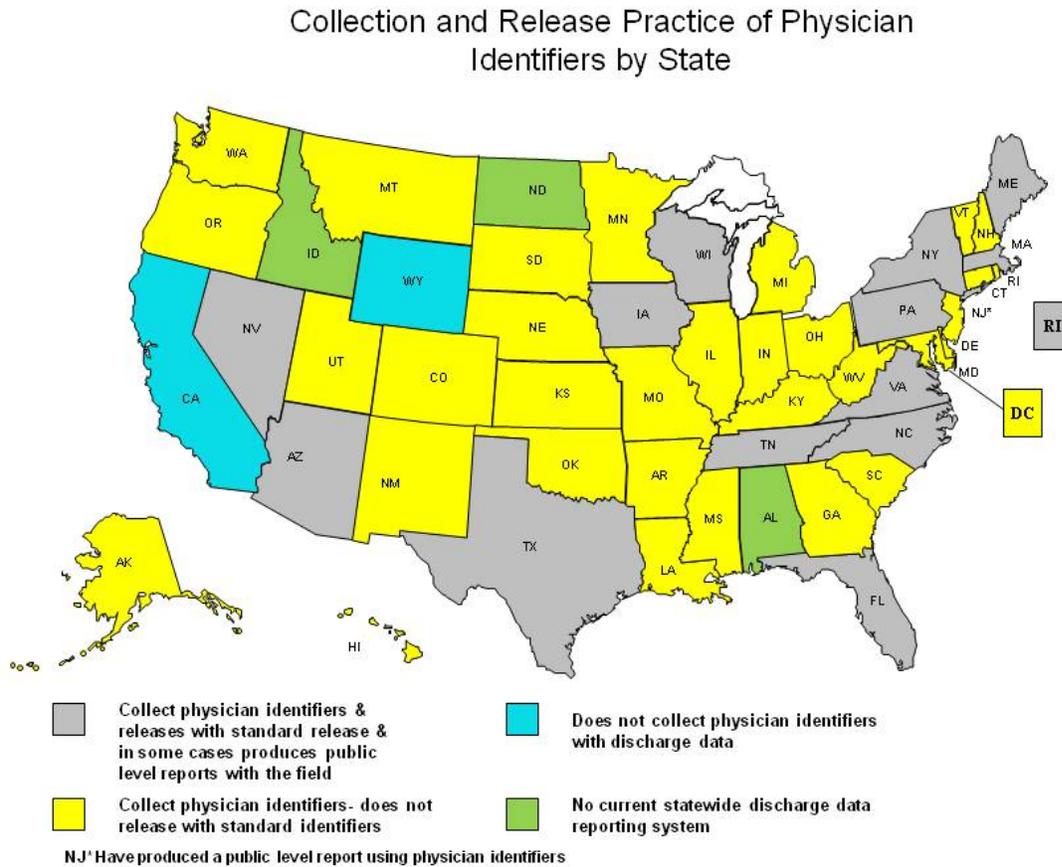
State Practices

Forty-six out of 48 state hospital discharge data systems capture one or more physician identifiers (NPI, SLN, and name) in their data submissions from hospitals, but not every state that collects physician data releases this information. States that do release data do not all do so in the same manner. We grouped state practices into one of the three following practice categories:

1. The state does not collect any physician identifiers with their discharge data (two states).
2. The state collects physician identifiers with their discharge data but DOES NOT release the fields in standard release files (32 states).
3. The state collects physician identifiers with their discharge data and releases the fields in their standard releases and in some cases produces public level reports using physician identifiers (14 states).

Figure 1 below illustrates agency collection and release practices across states.

Figure 1. Collection and Release Practice by Physician Identifiers by State



State Agencies Collection Practices of Physician Identifiers

Of the 46 states that collect physician identifiers (see Figure 1, above), the majority of states cited the UB-04 as the format for the hospital discharge data reporting systems they maintain, capturing all fields, including physician identifiers. The state of Tennessee is an example of a state with legal provisions for national standards:

Tennessee law requires “each licensed hospital to report all claims data found on the UB-92 form or a successor form on every inpatient and outpatient discharge to the commissioner of health.”¹²

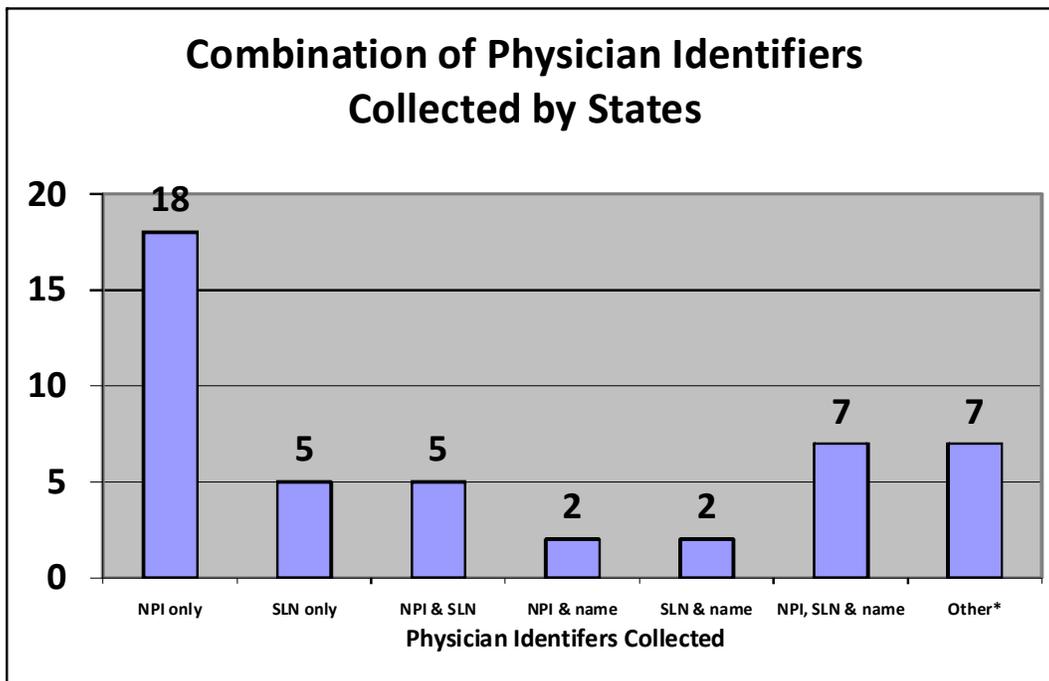
¹² Tennessee Code Annotated (T.C.A.), 68-1-108.

In 2007 a nationwide change from use of the UB-92 form for hospital claims billing to use of the new UB-04 form required hospitals to change the format of the claims billing data submitted to the Department of Health at that time.”¹³

States where mandates require use of the UB-04 benefit from the addition of non-billing fields to the national standard, such as Present on Admission (POA), that indicate whether a diagnosis was present upon an inpatient admission, and race/ethnicity fields. States with this mandate are able to move forward without revisiting the statutes and administrative rules processes. When adding new fields to state reporting requirements, the cost to agencies of adapting to these new fields includes expenses related to agency software programming, analytic report revisions, and staff time for monitoring reporting compliance.

The most common physician identifier field collected with hospital discharge data is the NPI. Thirty-nine of the 46 states that collect physician identifiers collect NPI either alone or in combination with other physician fields such as SLN and/or name. Figure 2 below shows the physician identifiers states collect for the inpatient and other discharge data systems they maintain, including ambulatory surgery and emergency department data sets.

Figure 2. Combination of Physician Identifiers Collected by States



*“Other” in the graph above refers to states that do not specifically require physician fields but will accept any physician identifiers submitted by the providers to their data agency. None of these seven states has a mandate to collect inpatient data and the data is provided voluntarily. These agencies report that the majority of hospitals submit the NPIs as the primary physician field.

¹³ Tennessee Division of Health Statistics, Tennessee Department of Health, Hospital Discharge Data System User Manual (2007).

Only two states do not collect physician-level data: Wyoming and California. The Wyoming Hospital Association collects the data from its member hospitals voluntarily and has plans to add physician identifiers in 2012. The California Office of Statewide Health Planning and Development (OSPHD) is the state agency that collects the hospital data under a legislative mandate. The California statute¹⁴ has a provision that “The office shall add no more than a net of 15 elements to each data set over any five-year period. Elements contained in the uniform claims transaction set or uniform billing form required by the Health Insurance Portability and Accountability Act of 1996 (42 U.S.C. Sec. 300gg) shall be exempt from the 15-element limit.” This restriction is discussed below:

OSHPD has the legal authority to add physician identifiers. Statute restricts the number of newly-added data elements—not physician identifiers specifically. The number of new data fields that can be added to discharge data reporting within a five year period is limited to 15. However, a data element can have multiple fields: e.g., Primary Language Spoken is a newly-added data element which has 12 separate components/fields, yet is considered one new data element. (OSHPD representative interviewed for this study)

Physician Types Collected

States collect physician identifiers for all physician types (e.g., attending and operating and/or other). All 46 states collect physician identifiers for the attending physician field, and all but one capture physician identifiers for the operating physician field. Thirty-one states capture physician identifiers for “other” physician fields. There is variation in the number of “other” physician fields agencies collect. The majority (24) collects identifiers for one “other” physician, and four states capture three or more “other” physicians.

Although most states have adopted the national standards endorsed by the NUBC, some states have adapted the national definitions. For example, one state’s definition of attending physician that varies from the national standard is more detailed than the national standard definition described in the adjacent text box:

State definition: The attending physician is the physician who is responsible for the longest portion of the patient’s total length of stay. If two or more physicians are responsible for an equal number of days of the length of stay, the attending physician is the physician most associated with the principal diagnosis.

Standard Definitions of Physician Identifiers Endorsed by the NUBC

Attending Physician: the individual who has overall responsibility for the patient’s medical care and treatment reported in this claim.

Operating Physician: the individual with primary responsibility for performing the surgical procedure(s) and required when a surgical procedure is listed.

Other Physician: the individual performing a secondary surgical procedure or assisting the Operating Physician.

¹⁴ California Health and Safety Code: Division 107-Statewide Health Planning and Development, Part 5, Health Data, Chapter 1, Health Facility Data.
http://www.oshpd.ca.gov/hid/mircal/Text_pdfs/LawsRegs/HealthDataLaw.pdf

State-specific definitions and codes increase the hospital's burden to report and also reduce the comparability of the information for cross-state and industry comparisons. They are not recommended by NAHDO and other industry groups.

Agencies reported the least confidence in the accuracy of attending and other physicians' fields and expressed the most confidence in the operating physician field, especially when the procedure conducted by the physician was an elective or significant one. As one interviewee pointed out, "Operating is usually clean; surgeons generally won't sign off on a surgery they did not perform."

Less confidence was reported with the attending physician field, especially when a physician works as part of a group practice. Pennsylvania Health Care Cost Containment Council (PHC4)¹⁵ did a first-generation report on Acute Myocardial Infarction (AMI) using the attending field and found that physicians preferred group attribution over individual physician attribution. PHC4 has focused on the operating physician field in reports since then.

It's a lot more difficult to assign the attending physician (the individual with responsibility for the medical care) as this is more of a shared experience. (State interview respondent)

Because multiple procedures are often conducted during a hospital inpatient stay, especially for complex diagnoses, many states felt that one field for a single operating physician was too limiting. Several states requested that NAHDO propose changes to the NUBC to expand the number of fields dedicated to the operating physician fields so different physicians could be associated with each procedure code.

Respondents were asked about opposition to collecting the physician identifiers. Significantly, those interviewed for our study reported that they experienced little opposition to the initial addition of physician identifiers to inpatient discharge databases. This report of minimal opposition is supported by the fact that a total of 46 of the 48 agencies collecting inpatient data also collect physician identifiers. One state agency that collects hospital data without a legislative mandate did indicate early resistance to the inclusion of physician fields with hospital reporting. This agency provided an example of initial physician resistance to collection by the medical staff in a large hospital system. It appeared that some medical staff were quite protective of the physician data and had concerns about how the aggregated fields might be used by the data agency. The agency worked with an influential hospital administrator who understood the value of statewide physician data and he served as a champion for its collection. There was no further resistance from the medical staff.

State Agencies Release Practices of Physician Identifiers

While the collecting of physician identifiers might not result in physician opposition, the same is not true of the release of physician-identified information. Of the 46 states that collect physician identifiers, 19 store/warehouse the data and 27 reported some form of release. Unfortunately, a significant number of states are warehousing (i.e., not really using) the physician identifiers they collect with their hospital databases. This underuse of data means that physician-level data often are not contributing to quality improvement or transparency efforts. Figure 3 below is a conceptual diagram illustrating the additive effects of data feedback and external use of data.

¹⁵ The Pennsylvania Health Care Cost Containment Council is an independent state agency responsible for addressing the problem of escalating health costs, ensuring the quality of health care, and increasing access for all citizens regardless of ability to pay.

Figure 3. Additive effects of data feedback and external use of data

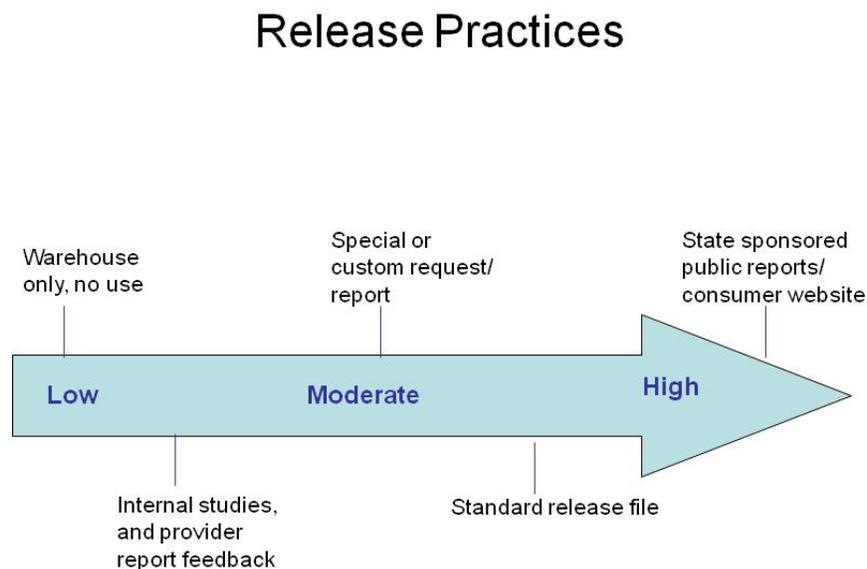


In non-use or internal use alone, the data do not get scrutinized outside of the data managers and selected staff. Through feedback to data suppliers (e.g., hospitals), the agency provides information about a hospital’s coding of physician identifiers. As an agency becomes more confident in its data, and releases data to secondary users and produces public reports leading to improvements across the system, it becomes possible to garner support for enhancing and improving the source data. Generally, once data is released, there is demand for either increased reliability of the data or more detailed data.

The overall physician data release and use practices across states can be scaled on a continuum ranging from no release outside of the agency to high use through agency production of physician quality reports. Most states tend to fall in the middle of the scale, with the majority of states making the data available upon special request or on standard or research analytic files for secondary users. It is difficult to discern if this variation in release practices reflects concerns about the physician fields or if underuse is due to agency resource constraints. States that are more restrictive about releasing data are likely to have lower costs of production, while those that release physician quality reports experience higher costs due to more staff resources being used. Figure 4 illustrates the scale of practices. To enhance the value of hospital discharge data sets, promote system transparency, and stimulate quality improvement, state agencies should assess where they are on the release scale now, and identify factors inhibiting

advancement to a higher use practice. If resources are a constraint, agencies, secondary release approaches may be an alternate option.

Figure 4. Data release practices



Among the 27 states that release physician identifiers, the extent to which they use the identified physicians for reporting varies:

- The majority of states reported that they have used physician identifiers for either some form of internal reports or reports back to providers for their use.
- Thirteen states reported releasing physician identifiers only through special requests (requiring approval by the agency or its data policy board) or research releases (requiring Institutional Review Board approval). Both processes review the justification for physician data, proposed uses, and measure for protecting the confidentiality of the data.
- Fourteen states release physician identifiers in their standard release files. Two states reported encrypting the field, including one state that has a law prohibiting them from releasing physician identifiers.

Agencies releasing physician information at any level expressed a belief that the information benefited the users, and, directly or indirectly, the public. As we observed, there are two methods agencies are using to release physician identifiers: release for secondary use in micro data files, and release through physician-level quality performance reports. Based on the interview results, it was difficult to assess the demand for physician fields in the micro data files separately from the other data elements agencies

release. For example, Maine has made physician names available in their hospital discharge special request file since 2007, and to date has received few requests for this information. Most of the requests for physician data elements have come from within the agency, research groups, hospitals, and software vendors. It is difficult to know if this relatively low request volume reflects actual demand or the lack of state marketing and outreach practices, as Maine's agency has not actively promoted the availability of physician fields nor has it produced physician-level quality reports for the public.

Of the 19 states that warehouse physician identifiers, ten reported that they are legally prohibited from releasing this information. We did not conduct a legal analysis to determine if these prohibitions were specific in the law or were perceived as prohibitions by agency staff. One state encrypts the physician identifier as a work-around to their legal restrictions. In the nine states without legal restrictions to physician data release, there were several reasons cited for non-release practices:

- Agency staff reports of lack of interest in the field (i.e., it had not been requested)
- Agency staff concerns about physician opposition to release
- Funding and staff constraints

Overcoming Barriers to the Public Release of Physician Data and Information

As we have learned from states releasing physician-level data, barriers to release and reporting of the data can be overcome. The state respondents cited technical, political, and financial barriers to releasing physician information to the public. Many states have adopted several release strategies to work around these challenges.

Concerns About Data Quality

Data quality is always a concern when collecting data across providers in a state, as coding practices and reporting capacities vary:

I imagine this would be extremely volatile. For one thing we don't know how good the data are. Second, just because you have the one physician identifier listed doesn't mean that that all the physicians that touched that patient are captured in the data. So we would have a lot of questions on how fair it is to make any kind of assessment on quality, transparency, or the like when we are not capturing in the data the complete situation. (State interview respondent)

Over the past two decades, states maintaining hospital discharge data systems have recognized that data quality improves with provider feedback and public release. This concern is likely the major factor contributing to the underuse of physician data in hospital discharge data systems. States with low confidence in the physician fields are the most likely to not use or to underuse them. As the releasing and reporting states have demonstrated, data quality alone is not a reason for non-release.

Perceived or Real Physician Opposition

Many respondents voiced concerns about physician opposition in general, but did not cite specific examples. Based on the experiences of states able to release physician data, overcoming physician opposition (perceived or real) is not necessarily insurmountable and can be addressed by adopting

practices such as engaging with the physician groups and hospitals, providing review and comment periods for the data requests, and submitting focused reports back to the physician providers:

We agreed to send all requests for the physician data to the specialist societies and in doing so gained their support. (State interview respondent)

Besides working with and through medical societies when producing quality reports, building value for key stakeholders into agency data products goes a long way in reducing opposition:

In our state we have worked with the hospital administrators....They want to know more about the physicians that practice at their hospitals. For example, they want to know if they are getting all the really sick patients at their hospitals and the better paying/healthier patients are going to another hospital where their physicians may practice. (State interview respondent)

Legal Prohibitions

Ten states reported legal prohibitions in their authorizing legislation that prevents the release of physician-level information. No legal analysis was conducted in this study to ascertain if these prohibitions were specific to physician-level releases. However, one state with this prohibition encrypts the physician identifiers in its public use files for secondary use, and another state will release the fields in secondary files if requested. Others states are producing hospital feedback reports with physician data for internal use by providers only. No state with these perceived or actual prohibitions is releasing physician-level quality reports publicly.

It is worth noting that no state that releases physician identifiers reported that this release had, to their knowledge, ever led to a breach of patient confidentiality.

Lack of Funding/Staff Resources

Resource constraints were cited as a reason for not making physician identifiers available in a few non-releasing states:

Our state is in financial straits so I don't see anything happening in this next year but in the future horizon...releasing this information could be used for decision-making and could be a critical part of healthcare reform, quality initiatives, and transparency. (State interview respondent)

However, states that do release physician identifiers in their standard release files indicated that there are few costs associated with this release, although they may not widely announce the availability of this information to potential users.

Legal prohibitions aside, many states have paved the way for other states to release physician identifiers, by successfully overcoming the barriers or inhibitors to such release. Standards, stakeholder support, and a legislative mandate authorizing the collection and release of quality reports have proven to be facilitators to the release of physician information. In addition to these facilitators, a number of states that have released physician identifiers also attributed their success to first piloting the release of this data:

We ran a pilot with a few select hospitals...had them verify that the NPI we had on record was correct...we had over 96 percent accuracy. (State interview respondent)

A pilot study provides the data agency with an opportunity to work closely with providers and physician stakeholders in addressing various problems and working through their concerns before a large-scale public release or reporting initiative. In addition, data agencies have the chance to assess data quality by

permitting hospitals to review their own data and correct errors. States facing one or more barriers to releasing physician identifiers, especially in public reports, may want to consider implementing a pilot period.

The Value of a Pilot

Prior to releasing its first physician report, Florida's Agency for Health Care Administration (AHCA) embarked on one-year pilot study, beginning June 2009. Because hospitals are responsible for the content, AHCA will validate license number, but not assignment of operating physician. AHCA asked hospital medical records staff to conduct quality assurance on the data. Although this was time-intensive, it was felt to be less so than changing rules to include the physician name for cross-reference with the physician number. The result of this validation was that very few physician coding errors were discovered. Errors that were found were due to the coding of the attending physician instead of the operating physician, the transposition of a license number, or the selection of the wrong name if physician names were similar on the hospital drop-down screens. As a result of this pilot, AHCA will release physician volume reports on major orthopedic procedures (total hip and knee), thus empowering consumers to shop for procedures.

Public Reporting

Only a small number of states have publicly released physician quality reports. We identified six states of the 46 that have produced or plan to produce agency-sponsored public reports that identify physicians. New Jersey and Massachusetts have produced public reports on surgical volume, but due to staff reductions/resource restrictions these reports are not currently in production. New York, Virginia, and Pennsylvania produce physician-level comparative performance reports on an ongoing basis. Florida will soon release physician volume-level—that is, the number of procedures performed—reporting after a pilot phase. Links to these state-sponsored publicly available reports are found in the end notes of this paper.

States releasing physician-level reports largely only use the operating physician fields in these reports. As revealed in an earlier section of this paper, states have more confidence in the operating physician field. Most have worked with hospitals and medical societies to validate the data, either through a random sample review across hospitals, or a pilot reporting period in which hospitals verified the physician of record. Data quality was an issue in a small percentage of hospitals, according to these states. All expressed the opinion that it is not the state's job to dictate how physician attribution is assigned in hospitals because hospitals are in the best position to work with their physicians and coders to adopt a system of physician assignment that works best for them.

Because states releasing physician-level performance reports worked closely with stakeholders, including physicians, states reported little opposition to public reports:

When we first started doing these reports, it was fashionable to challenge the measures—but there were no real grounds to challenge the information. Physicians

got used to what we were doing and now they are interested in what their peers are up to. (State interview respondent)

Some states releasing physician performance reports based on hospital discharge data took extra measures to gain physician confidence and support, including validation activities:

Initially we took a random sample of inpatient records across the state's hospitals; then we had the hospitals verify that what the physician reported was correct. We got 95 percent accuracy; then this was reported to the medical society, who were satisfied that the data was accurate/quality high enough for public reporting. (State interview respondent)

Massachusetts and Florida are two states that have implemented or are planning to implement public reports on physician volume. The volume statistics are for specific uncomplicated major procedures such as elective partial hip replacement. This approach also allows hospitals to focus on physician coding for specific cases or procedures to be published. According to Florida, volume reports provide a starting point in working with the state's hospitals on the validation and reporting process which will lead to expanded reporting on more conditions and outcome measures in the future. Florida will report one year of data, with quarterly rolling updates going forward. By setting suppression thresholds (e.g., less than ten records), those records most likely to have erroneous data will be omitted, raising confidence in the first public report. Unlike outcomes reports, volume statistics do not rely on risk adjustment methodologies, but are not without controversy. While volume does provide consumers with some information about how many surgeries have been done by their specific surgeon, some may infer that high volume is associated with better results or higher quality, which is not always the case. Others argue that it is better than having no surgeon information at all.

PHC4 has the most experience releasing physician outcomes reports. PHC4 has released information on physician volume and mortality, finding that procedures are amenable to measuring and comparing. PHC4 found that physicians with a volume of at least 40 procedures had better outcomes than those with less than 10 cases. PHC4 also combines several years of data to boost the numbers for some reports. PHC4 has tested and validated the data and worked with local stakeholders on methodologies for risk adjustment:

PHC4 developed a complex mathematical formula to "risk adjust" the data, meaning that hospitals and surgeons received "extra credit" for operating on patients who were more seriously ill or at a greater risk than others. Risk adjusting the data was important because sicker patients might be more likely to die, stay in the hospital longer, or be readmitted.¹⁶

Regardless of the approach taken for physician quality reports, those interviewed underscored that physician engagement is important, either in the form of validation and/or in the form of physician endorsements:

¹⁶ Technical notes for *Cardiac Surgery in Pennsylvania, 2007 Report*, <http://www.phc4.org/reports/cabg/07/docs/cabg2007technotes.pdf>.

Our medical society supported the release of physician fields with our public use file. We also include physician endorsements with our quality reports. Some individual physicians do not like it, but most recognize release of physician data is inevitable and consumers need the information. (State interview respondent)

Additional Concerns and Challenges Associated with the Collection and Use of Physician Identifiers

Political Opposition

Respondents reported little physician stakeholder opposition to the collection of physician identifiers. Resistance that once occurred a decade ago may have diminished in today's environment where transparency—especially in the context of federal health care reform—is increasingly expected and so more accepted. One state suggested that the diminishment of HMOs may have caused stakeholders to be more comfortable with public reporting. States releasing physician performance reports were more likely to face opposition, but all reporting states indicated that this opposition was manageable by engaging physician groups throughout the process and providing review and validation opportunities.

Funding Limitations

State health data agencies often have limited resources, resulting in underuse of the data maintained by these agencies, including physician identifiers. Resource limitations were cited as one reason for not using or under-using physician identifiers with hospital discharge data. Concerns about validation, risk adjustment, and liaison efforts with physician stakeholders were issues that funding might help overcome. However, resource limitations alone do not explain the underuse of physician data. When physician fields have already been collected and are being stored in-house, the cost of making the data available to secondary users in standard files and reports is marginal. While it may take significant analytic staff time to produce an agency-sponsored quality report, release of physician fields in public use or research files does not, providing there are no legal prohibitions to the release.

Editing and Validation

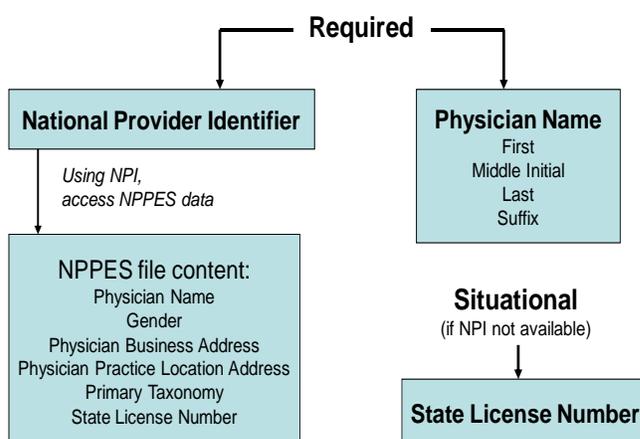
States indicated that concerns about the quality and validity of the physician data were less of an issue than initially expected. State agencies releasing physician quality reports did provide a validation review period for providers. Virginia and Pennsylvania also provided the statistics to the physicians in the reports for their review and comment. Interview responses about the edit and validation practices included the following:

- Seventeen of the states collecting physician identifiers do nothing themselves to validate/edit them; however, some noted that their vendors might do some system checks but they were not certain of the specifics.
- Ten states reported that they conduct some basic edits for missing or invalid fields (e.g., checking that the correct numbers of digits were entered in to the NPI and/or SLN fields).
- Nineteen states reported more rigorous content validation of the physician fields. Validation includes verifying the accuracy of the NPI and/or SLN against the NPI or state license databases. States publicly releasing a physician performance report are more likely to conduct cross-validation with the major physician data bases, and to ask the hospital data supplier and/or physicians identified in the report to review and validate the results.

Attribution

Interview respondents did not mention attribution of physicians as a major challenge to the release of data. More concern seemed to be centered on the validation of the fields themselves and less on assigning physician responsibility, which is a hospital coding function. Each additional physician identifier an agency collects increases the capacity for accurately identifying the physician. By using the NPI as the primary physician identifier, and the physician's name to verify the accuracy of the NPI, a state is able to acquire a significant amount of data about a provider (such as specialty) by accessing the National Plan & Provider Enumeration System (NPPES) database as shown in Figure 5. If the SLN is submitted as a default value to the NPI, state physician licensing organizations also have extensive databases similar to the NPPES. However, a state licensing entity may have policies and rules which could limit or prohibit access to the physician identifying data. Consequently, using the SLN may not always provide the additional data available through the NPPES.

Figure 5. Model to for assigning physician attribution using NPPES in Maine



Physician attribution concerns seemed to be higher in agencies not releasing (or collecting) the fields, as attribution was cited as a reason for non-use of the physician fields. Reporting states recommended pilot studies to test the validity of physician reporting by hospitals and to focus early reporting efforts on operating or specific procedures where physician attribution is assumed to be more reliable. However, most states did agree that data that is released and used improves over time, and concerns about data quality should not be the major inhibitor of the release and use of physician identifiers:

Release it! We don't have the resources to validate the data but consumers have a right to know. If I'm choosing between surgeon A and B, I should know that surgeon A has done 50 knee replacements in the past year and that surgeon B has done 150 in the past year. Consumers have the right to know this and to see the outcomes. Hospital and physician information should be in the public domain. (State interview respondent)

Although single payer physician group reports or profiles may be more reliable than individual physician reports because of larger sample sizes,¹⁷ this may be less of a concern for statewide hospital discharge data. The merits of individual versus group attribution needs more study. As more states enter the reporting arena, physician-specific methods and tools are likely to evolve.

Measuring Impact

Hospital discharge data programs have historically found it difficult to measure the impact of statewide data reporting and use. Respondents cited the difficulty in linking their physician data release practices to health care reform or system improvements because secondary and external users often do not report back to the agency about policies or decisions made as a result of the data. Research provides evidence that publicly-available data and quality reports do highlight system variation and lead to quality improvement. A study of Wisconsin hospital discharge data revealed that making performance information public stimulates quality improvement, especially in areas with low performance.¹⁸ Physician resistance to measurement is well-documented but can be expected to soften, especially as regulators, consumers, and purchasers increasingly demand physician-level reports.¹⁹

Conclusion and Recommendations for State Agencies

In conclusion, state health data reporting systems are well-positioned to drive system improvements by making physician-level data available for multiple purpose uses, but many are falling short in their collection and release policies. Physician-level reporting is where hospital quality reporting was many years ago. Over the last decade, states have become more uniform in the release and use of hospital-level information for public disclosure; similar trends can be expected with physician-level data release as consumer and industry demand for this information grows.

As the demand for health care accountability and transparency is expected to grow, agencies maintaining statewide hospital discharge data systems are challenged to respond. Our interviews with hospital discharge data agencies across the country revealed that states can use several methods to advance the release and use of physician identifiers, methods which maximize the utility of existing hospital data sets for system improvements and transparency. Based on this study and decades of experience working directly with states collecting and releasing statewide health care data and information, NAHDO makes the following recommendations related to the collection and use of physician identifiers collected with hospital inpatient discharge data:

- States should learn from states that are collecting and releasing physician-level data and work with their stakeholders to find a collection and release solution that aligns with their needs.
- Health data agencies should collect physician identifiers with hospital discharge data submissions.

¹⁷ T.P. Miller, T.A. Brennan, and A. Milstein, "How Can We Make More Progress In Measuring Physicians' Performance to Improve the Value of Care?" *Health Affairs* 28:5 (Sept/Oct 2009): 1429-37.

¹⁸ J.H. Hibbard, J. Stockard, and M. Tusler, "Does Publicizing Hospital Performance Stimulate Quality Improvement Efforts?" *Health Affairs* (Mar/Apr 2003): 84-94.

¹⁹ Milstein, et al., *Health Affairs* (Sep/Oct 2009).

- At a minimum, identifiers for attending and operating physician fields should be collected using national standard formats and definitions.
- The capture of “other” physicians does not pose additional collection costs and may have future utility as coding and standards evolve, but currently is not a reliable field for public reports.
- At a minimum, the NPI should be the primary identifier collected for the attending, operating, and other physician types.
- SLN, and, if possible, physician name should be reported for the attending physician, operating physician, and other physicians. These fields facilitate validation.
- The data should be captured using national standards and formats.
- States that collect physician identifiers with hospital discharge data should release the fields in standard releases and research files. Agencies should work with stakeholders to craft release policies and products that align with the state’s legal and political environment. Each state has unique confidentiality rules, and physician sentiment varies across states around public reporting.
 - A conservative approach may be to release physician fields on custom files requiring special requests or an application process requiring the user to describe how the physician data will be used.
- States collecting physician fields should work with medical societies, providers, and other stakeholders to produce consumer-oriented public reports.
 - Other state reports can serve as models for the initial release of physician reports. Volume statistics for high cost and high volume procedures has been a starting point for some states.
 - A review and validation period for hospitals, and, where practical, physicians identified in the reports, has proven to be essential when releasing physician-level quality reports.
 - Inclusion of hospital and physician comments with public reports and solicitation of physician endorsements was helpful in other state reports.
- The physician fields in the national standards need to be improved. NAHDO and states should explore the feasibility of expanding the physician fields in the UB standards to include an operating physician field for each procedure code.
- Federal agencies such as AHRQ should work with NAHDO and states to develop analytic methods and tools for physician-level reporting based on hospital discharge data. As we learned with the AHRQ QIs, open source methods and measures will reduce the analytic costs to a single data agency, expand public reporting initiatives, and generate uniform benchmarks.

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Links to State Sponsored Reports

Virginia Health Information (VHI)

<http://www.vhi.org/physicians.asp>

Pennsylvania Health Care Cost Containment Council

<http://www.phc4.org/reports/>

New York Department of Health

<http://www.health.state.ny.us/nysdoh/healthinfo/aboutpp.htm>

New Jersey Department of Health and Senior Services

Single report in 2005:

<http://www.state.nj.us/health/healthcarequality/documents/bariatricsurgeryrpt.pdf>

Massachusetts Division of Health Care Finance and Policy

<http://www.mass.gov/?pageID=eohhs2subtopic&L=7&L0=Home&L1=Consumer&L2=Physical+Health+and+Treatment&L3=Quality+and+Cost&L4=Data+and+Statistics&L5=Physicians&L6=Volume+by+Surgeon+and+Hospital&sid=Eeohhs2>