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December 6, 2022

The Honorable Chiquita Brooks-LaSure
Administrator
Centers for Medicare & Medicaid Services
Hubert H. Humphrey Building, Room 445–G 200
Independence Avenue, SW
Washington, DC 20201

Re: Request for Information; National Directory of Healthcare Providers & Services

Dear Administrator Brooks-LaSure:

On behalf of the physician and medical student members of the American Medical Association (AMA), I appreciate the opportunity to offer our comments to the Centers for Medicare & Medicaid Services (CMS) on the request for information (RFI) for public comments on establishing a National Directory of Healthcare Providers & Services (NDH).

Health care directories are crucial resources for patients and the health care industry. In 2015, the AMA called on the federal government to address several cornerstone issues to enable interoperability. In particular, the AMA noted that a "major stumbling block to information exchange is the lack of provider directories," that a provider directory is "fundamental to information exchange," and to "focus on specific use cases."[1] CMS' attention on provider directories is welcome and needed. More recently, the AMA collaborated with the Council for Affordable Quality Healthcare (CAQH) to examine and identify challenges associated with provider directory accuracy. Our research with CAQH shows that a solid foundation of basic provider directory information is critical for success.[2]

The AMA supports the goals of advancing public health, improving data exchange, streamlining administrative processes, and promoting interoperability. Yet, as CMS' authority is over its regulated programs, and does not extend to other payers and providers, it could be difficult for an NDH to have meaningful impact. CMS should avoid creating another place for physicians and practices to submit and update data by working with physicians, and those experienced in managing physician data, to identify and solve for directory inaccuracy root causes. Along with these stakeholders, **CMS should build a firm NDH foundation, utilize existing industry initiatives, and focus on achievable goals and early wins.**

The AMA's comments are informed by our experience working with over a million physicians across geographic locations, medical specialties, and practice sizes to reduce administrative burden. The AMA has a long history of collecting, verifying, exchanging, and working with physician information and is a trusted resource for thousands of entities. We act as a primary resource for hospitals, health systems, managed care organizations, medical schools, researchers, and other health care and professional medical

[1] https://searchlf.ama-assn.org/letter/documentDownload?uri=%2Funstructured%2Fbinary%2Fletter%2FLETTERS%2Fonc-interoperability-roadmap-letter-03april2015.pdf
[2] https://www.ama-assn.org/system/files/improving-health-plan-provider-directories.pdf

organizations seeking to verify physician credentials in accordance with accreditation standards. With over 115 years of data management experience, we are pleased to respond to CMS' RFI. In addition to the detailed responses found in the Appendix, the AMA has the following overarching comments and recommendations regarding an NDH.

Start with the fundamentals of building a directory

Maintaining up-to-date and accurate physician name, practice location, and phone data is critical and foundational to directories. CMS audits have shown that most inaccuracies found in provider directories today are related to physician location. Physician location information fluctuates rapidly with approximately 24-36 percent of location data eroding per year. This creates a challenge in validating and verifying data. **To achieve a substantial impact in this area, CMS should work with physicians and provider data management experts to establish a publicly available source of truth for this limited data set.**

Our experience also shows that a lack of data reporting standards is a major driver in physician burden. Each payers' directory requires that physicians provide different types of data, similar data but named differently, or requires that physicians report their information using different data formats. The AMA considers physician location inaccuracies and the absence of industry-recognized data standards as unresolved *directory fundamentals*. To address these fundamentals, **CMS should consider policies that would standardize physician data elements with the most impact on accuracy and to require standard reporting formats in all common business transactions.** Moreover, CMS' authority is limited to payers and providers that participate in CMS programs. Lacking a solid value proposition for unregulated entities, it is unlikely that an NDH would reduce administrative burden. We urge CMS to consider bridging the gap between regulated/unregulated entities.

Coordinate with existing industry initiatives that reduce provider burden

Physicians and their staff update directory information for an average of 20 payers per practice.[3] Payers and other entities are inconsistent in the type of data requested or how data should be reported. Several industry initiatives are working to address this by standardizing and streamlining provider data submission, verification, and data sharing. CMS should promote these initiatives and leverage existing mechanisms that gather physician data. For example, an NDH would benefit from utilizing existing physician engagement channels. These trusted industry-operated platforms contain much of the data needed for an NDH and are already adopted by most payers and providers. CMS should consider platforms that are measured against regulatory and accreditation standards and are verified by or designated as equivalent to primary sources. **To reduce physician burden and improve data accuracy, CMS should collaborate with industry-operated pre-verified data sources with established physician engagement channels.**

Solve a few important problems, instill trust, and create a good user experience

Through industry collaboration, CMS can improve accuracy and reduce the burden on physicians who submit data to multiple directories. Yet, if expectations are not managed, a directory of providers and services could quickly grow beyond practicality—weighted down by a morass of goals. To limit unsustainable scope creep, an NDH should start small, and be focused and centered on achievable and

[3] CAQH. (2019). The Hidden Causes of Inaccurate Provider Directories, See page 2. Retrieved from https://www.caqh.org/sites/default/files/explorations/CAQH-hidden-causes-provider-directories-whitepaper.pdf

measurable goals. CMS should be clear about its objectives, use cases, and set and publicize performance metrics. An NDH should unambiguously solve one problem for the industry before prematurely moving to the next. To build trust, CMS should focus on a single issue and achieve success in key performance dimensions. For example, **an NDH should focus on creating a high quality, limited dataset that includes clinician practice information, ensures bidirectional exchange of standardized demographic information, and promotes automation to reduce the need for human resources.**

The AMA applauds CMS for taking steps to address the long-standing challenges of provider directory accuracy. CMS rightfully recognizes the importance of taking a phased approach, building trust, and gaining industry buy-in. We support the laudable aim of an NDH and reiterate the significance of starting small with practicable and achievable goals. The AMA welcomes continued engagement with CMS as it works towards addressing a fundamental component for information exchange. If you have any questions regarding this letter or would like to schedule a follow-up discussion, please contact Matt Reid, Sr., Strategic Health IT Policy Consultant, at matt.reid@ama-assn.org.

Sincerely,

James L. Madara, MD

Attachment

Appendix

AMA Comments in response to CMS' National Directory of Healthcare Providers & Services RFI

CMS RFI Comment Solicitation	AMA Comments
We solicit comments on the following topics related to the establishment of an NDH	
What benefits and challenges might arise while integrating data from CMS systems (such as NPPES, PECOS, and Medicare Care Compare) into an NDH? What data elements from each of these systems would be important to include in an NDH versus only being available directly from the system in question?	The AMA appreciates CMS interest in integrating data from CMS systems into a National Directory of Healthcare Providers & Services (NDH). It is our understanding that CMS' systems are not designed to natively support the capturing and sharing of physician and provider organizational data. It is unclear what value CMS systems would provide in an early phase NDH. For instance, based on experience with CMS building Care Compare, data accuracy and reliability continue to be a challenge in CMS' systems. It is our understanding that, if a physician identifies an error with their demographic data, it may take CMS up to six months to correct the information, which is unacceptable for a potential resource to assist patients with finding care. Moreover, it is concerning that if CMS were to pull from existing data repositories, inaccuracies would just be propagated without an easy avenue for correcting. For instance, our members report that when their colleagues move medical practices or physical office locations, their new address information does not update in a timely fashion—with some physicians reporting that office location data is over a year out-of-date in CMS' systems. CMS states in its request for information (RFI) that "directories often contain inaccurate information" and therefore is a primary driver for an NDH. We are concerned that delayed data updates could negatively impact the usefulness of an NDH, especially if CMS aims to build trust and buy-in from stakeholders. **As such, the AMA urges CMS to refrain from incorporating data with known inaccuracies and reliability challenges in an NDH until adequate investment is made to improve accuracy and reliability.** We also have serious concerns about the quality information through Star Ratings posted on Care Compare. CMS utilizes two different scoring rules and methodologies between the Merit-based Incentive Payment System (MIPS) program and Care Compare Physician Star Ratings. The lack of quality measure alignment in these systems will detract from the value proposition CMS seeks to gain by integrating quality data. As we have repeatedly

	highlighted for years, **there is an urgent need for CMS to align and move to one consistent data calculation between the MIPS benchmark methodology and Physician Compare star ratings.** Lastly, the AMA reiterates the importance of establishing a formal process to ensure the accuracy of measures before they are posted publicly. Physicians should be able to review measures in advance and appeal for reconsideration if they suspect inaccuracies. The AMA stresses the importance of educating patients on the meaning and limitations of reported differences among physicians and clinicians and on how to effectively use this information to make informed health care decisions.
Are there other CMS, HHS (for example, HPMS, Title X family planning clinic locator, ACL's Eldercare Resource Locator, SAMHSA's Behavioral Health Resource Locator, HRSA's National Practitioner Data Bank, or HRSA's Get Health Care), or federal systems with which an NDH could or should interface to exchange directory data? • What are these systems, how should an NDH interact with these systems, and for what purpose? • What data elements from each of these systems would be important to include in an NDH?	The Medicare Plan Finder (MPF) is a web-based tool that patients use to search for a Medicare Advantage (MA) plan. To date, the MPF has been of limited utility in searching for plans based on whether the patient's physician(s) are in the MA plan's network. An NDH could improve MA plan/physician queries. • Since the advent of the Medicare Part D prescription drug benefit, patients have been able to input information about their prescription drugs and obtain comparisons on the MPF showing which drugs are on each plan's formulary and what their out-of-pocket costs would be for their drugs in different Part D plans offered in their community. The MPF would be more useful for patients if they could similarly put in the name of one or more physicians and see information displayed for each MA plan in their area indicating whether the physician is in the plan's network. It is also difficult for patients to determine which plans will have physicians available nearby if new conditions arise or their existing conditions worsen. Patients should have a way to use the MPF to compare plans based on the relative size and specialty structure of each plan's network. • There is also no simple way for physicians to determine whether a plan is accurately identifying them as in-network when they have a contract with an MA plan and out-of-network when they do not have a contract. A site where both physicians and patients could see all the MA plan networks in which a physician participates in one place would help provide more accurate, real-time information and enable patients to make more informed choices about their

	Medicare. • The AMA advocates that CMS maintain a publicly available database of physicians in network under MA and the status of each of these physicians in regard to accepting new patients and do so in a manner least burdensome to physicians. In assessing potential data sources, **CMS should unequivocally rule out any interface or exchange with the HRSA's National Practitioner Data Bank (NPDB) for purposes of establishing or developing an NDH.** The NPDB is a federal web-based repository of information on medical malpractice payments and settlement agreements related to health care providers.[1] It is a workforce tool and a nonpublic-facing database with the specific purpose of verifying the background of physicians and other health care providers as they seek employment with health centers. The NPDB holds unanalyzed, raw data on physicians. The Government Accountability Office (GAO) has noted its "detailed tests raise serious concerns about the integrity of National Practitioner Data Bank information." The GAO found that the data bank is riddled with duplicate entries, inaccurate data, and incomplete and inappropriate information.[2] Most reports in the NPDB are based on legal settlements that were never adjudicated by a court, never proven to involve negligence, and never settled with the consent of a physician. Yet the mere existence of a settlement record can be unduly pejorative and fail to reflect that hospitals or physicians sometimes settle a claim to avoid litigation costs, even when no negligence has occurred. There are other, more relevant, patient-facing sites with which an NDH could interface to exchange directory data. **Rather than disseminating flawed and pejorative data from the NPDB, CMS would more effectively serve patient populations by enhancing state and federal investigative and reporting systems already in place.**

[1] https://www.npdb.hrsa.gov/topNavigation/aboutUs.jsp

[2] Report quoted in, "Raw Data Not Enough to Determine Physician Competency," Steven J. Stack, MD, Former President, AMA, available at: https://www.ama-assn.org/about/leadership/raw-data-not-enough-determine-physician-competency

Added by the Cures Act, Section 3001(c)(9)(D)(i) of the PHSA requires ONC to create, annually update, and publish on its website a ‘‘list of the health information networks that have adopted the common agreement and are capable of trusted exchange pursuant to the common agreement.’’ Are there beneficial ways an NDH could interface with such a list or provide additional information that may be useful, such as a directory of services? Are there use cases for integrating such health information network data in an NDH?	The AMA supports CMS interest in aligning information sharing network efforts. Yet, given the Trusted Exchange Framework and Common Agreement (TEFCA) is in its infancy, it is unclear what role the TEFCA will play in an NDH. Further consideration is necessary. For instance, CMS should evaluate if qualified health information networks (QHIN) could benefit if QHIN transactions leverage provider or service data maintained by the NDH to properly route the transaction. Each electronic health record (EHR) system has its own internal physician directory. An NDH-TEFCA interface may also increase the accuracy and completeness of multiple systems. Importantly, **the AMA urges CMS to begin with clear and focused NDH goals and prove a success prior to expanding to TEFCA integration.**
What types of data should be publicly accessible from an NDH (either from a consumer-facing CMS website or via an API) and what types of data would be helpful for CMS to collect for only internal use (such as for program integrity purposes or for provider privacy)?	An NDH should limit sensitive or unreliable data to internal use until individuals portrayed can see the data, provide input, and then choose whether to make data consumer-facing. Physicians could face discrimination and may have strong preferences if their demographic information is public. It would be particularly important to evaluate benefits and unintended harms for both physicians and patients over time, and to share the results of those evaluations. Moreover, CMS should allow physicians to first review and approve their potentially sensitive data, establish a mechanism for physicians to opt-out, and utilize a role-based access management system.
Are there particular data elements that CMS currently collects or should collect as part of an NDH that we should not make publicly available, regardless of usefulness to consumers, due to its proprietary nature? To the extent that an NDH might collect proprietary data from various entities, what privacy protections should be in place for these data?	Race, ethnicity, or other demographic data should not be included in a public-facing directory until a limited-access beta version is thoroughly vetted with physicians who would be displayed in the directory to understand and address unintended harms. Directories should not include personal information such as home address, cell phone, email address. Physicians should be able to opt-out of appearing in the directory. There are instances where physicians have been the target of stalking, harassment, and violence, to the point of requiring legal interventions (e.g., Orders of Protection). An NDH could escalate physician harassment without sufficient privacy protections. An NDH should account for the following data privacy principles: • Data minimization, • Right to delete data,

	• Limited disclosures to only the information necessary to fulfill the immediate and specific purpose of disclosure, and • Protection from discrimination, stigmatization, discriminatory profiling, and exploitation resulting from use and sharing of data. Relatedly, there should be a confidential method of handling name changes to protect physician privacy.
We want an NDH to support health equity goals throughout the healthcare system. What listed entities, data elements, or NDH functionalities would help underserved populations receive healthcare services? What considerations would be relevant to address equity issues during the planning, development, or implementation of an NDH?	NDH development should root its foundation on data security and health equity innovation. The AMA, along with 14 other organizations, established the In Full Health Learning and Action Community to Advance Equitable Health Innovation initiative. This community is committed to putting equity at the center of health innovation. An early deliverable has been the Equitable Health Innovation Solution Development toolkit. This toolkit provides a roadmap to engage communities that have been historically marginalized in the design, development, testing and evaluation of health innovations to ensure positive health outcomes and avoid or mitigate harm. The AMA is encouraged by CMS interest in incorporating health equity by design within an NDH. **We recommend that CMS consider policies that align and promote the ten engagement actions outlined within the toolkit.** These actions were developed by health equity, information systems, and clinical experts so developers of health innovations can ensure equitable impact of their products or services.[3] Many community-based organizations (CBO) (e.g., United Way 211, Unite Us, Find Help / Aunt Bertha) operate on disparate information technology (IT) systems not utilizing health IT interoperability standards. Those organizations do not traditionally bill health plans which limit their administrative information exchange capabilities (e.g., lack of standardized demographic information). As such, a comprehensive and up-to-date CBO directory will require substantial dedicated resources and regular active outreach by email and phone. Relying on passive updates from physicians (or other end users) is insufficient. Users will lose trust if they find data unreliable. **The AMA urges CMS to keep an initial NDH small, focused, and centered on achievable and measurable goals before expanding its scope.** Substantial investment and standardization are needed to properly expand to include CBOs.

[3] https://www.ama-assn.org/delivering-care/health-equity/toolkit-shows-how-developers-can-link-health-equity-innovation

How could NDH use within the healthcare industry be incentivized? How could CMS incentivize other organizations, such as payers, health systems, and public health entities to engage with an NDH ?	Incentives would likely not be necessary if an NDH is proven to address known gaps and reduces end user burden. Rather than considering traditional CMS incentives, CMS should work toward the development of an NDH that is viewed as a "must have" by payers, health systems, medical practices, and public health entities. The AMA and its members have experienced unintended consequences when complex health care needs are addressed by blunt approaches such as mandates, requirements, conditions of participation, or other CMS disincentives. Unfortunately, in these instances, health IT became a function of CMS mandates, used for compliance, and lost its utility. CMS should develop an NDH that solves a few important problems, instills user trust, and creates a good user experience. Several factors should be considered to make an NDH a *must have*: • An NDH should be an "update once, propagate everywhere" service. Physicians, for instance, should only need to submit or update information to a single location. Relatedly, entities seeking physician information, e.g., payers, should find everything they need without having to contact physician offices for additional data or data formatted in a different way. **Additional outreach by payers should be expressly prohibited unless absolutely necessary.** • An NDH should not try to "boil the ocean." A directory should address known gaps in the industry, e.g., providers at more than one location, bidirectional exchange of standardized demographic information, and automation that reduces the need for human resources. To achieve this, CMS should use its policy levers to coordinate, promote, and untimely require: • standard directory data value sets, • standard formats for data submission, and • standard definitions and categorization for certain data elements.
How could CMS evaluate whether an NDH achieves the targeted outcomes for its end users (for example, that it saves providers	A successful NDH should be evaluated by the following criteria: • verification of data accuracy, and

time or that it simplifies patients' ability to find care)? We solicit comments on an NDH concept and high- level functionality: • Would an NDH as described provide the benefits outlined previously? • Would an NDH as described reduce the directory data submission burden on providers? • How could a centralized source for digital contact information benefit providers, payers, and other stakeholders?	• verification that physicians and practices are not required to submit data to multiple stakeholders. To achieve CMS' stated goals, CMS must first resolve issues facing directories today. For instance, CMS claims that an NDH will validate against primary sources. However, there are few primary sources for many of the data elements listed in the imagined directory. **The AMA has significant experience in physician data management and believes that provider location is the primary issue CMS must solve for an NDH to be successful.** Provider location information fluctuates rapidly e.g., approximately 24-36 percent of location data erodes per year. This creates a challenge in identifying a primary data source. For example, a physician may practice at a total of five locations. They may practice at locations 1, 2, and 3 when seeing patients from insurance plan A and location 4 for plan B, and location 1 and 5 for plan C. Furthermore, location affiliation is dictated by contracts between the payer and the physician. These contracts are often complicated and may contain specific clauses like limitations on the percentage of patients at any given location. **A successful NDH will require grappling with complex physician location and payer affiliation information.** Digital contact source information is also challenging. Most physicians do not know their digital contact information (also referred to as an individual digital endpoint), if they even have one, or who maintains that information. Often, it is the EHR vendor or another health IT service that holds this information. **CMS should consider what policies are needed to free physicians' digital contact information from the confines of health IT systems.** Lastly, success will mean that an NDH reaches minimum benchmarks of being accurate, complete, and up to date before data is made consumer-facing. CMS will likely only get one chance to win users' confidence in an NDH. CMS should consider tracking the following outcomes: number of users, unique users per unit time, and user attrition.
We have heard interest in including additional healthcare-related entities and provider types beyond physicians in an NDH-type directory beyond those providers included in current CMS systems or typical	To promote more transparent and higher quality health care, **CMS should consider including medical directors in skilled nursing facilities (SNF) within the NDH.** The medical director is often unknown and overlooked by patients and their families. Family members may not have time to navigate the medical hierarchy or understand that a medical director oversees care delivery at the SNF. This is especially true when family members

payers' directories? For example, should an NDH include allied health professionals, post-acute care providers, dentists, emergency medical services, nurse practitioners, physician assistants, certified nurse midwives, providers of dental, vision, and hearing care, behavioral health providers (psychiatrists, clinical psychologists, licensed professional counselors, licensed clinical social workers, etc.), suppliers, pharmacies, public health entities, community organizations, nursing facilities, suppliers of durable medical equipment or health information networks? We specifically request comment on entities that may not currently be included in CMS systems. • For what use cases should these various entities be included?	live far away and are unable to make frequent visits to advocate for the care of their loved one themselves. A public listing of SNF medical directors would help CMS achieve many of the recommendations in the 2021 Office of the Inspector General Report. Such a listing of SNF medical directors would give family members and patient advocates a central place to find the name and contact information of the physician responsible for care oversight at a SNF, potentially enabling remedial action that stops short of filing a complaint with the local public health department. Such a listing would also allow consumers to check the credentials of medical directors and to identify medical directors that have oversight responsibilities for multiple SNFs.
Are there NDH use cases to address social drivers and/or determinants of health? If so, what are they? Are there other entities, relationships, or data elements that would be helpful to include in an NDH to help address the social drivers and/or determinants of health (for example, community-based organizations that provide housing-related services and supports, non-medical transportation, home-delivered meals, educational services, employment, community integration and social supports, or case management)? What types of entities or data elements relating to social drivers and/or determinants of health should not be included in an NDH?	Many CBOs (e.g., United Way 211, Unite Us, Find Help / Aunt Bertha) operate on disparate information technology (IT) systems and do not utilize health IT interoperability standards. Those organizations do not traditionally bill health plans which limit their administrative information exchange capabilities (e.g., lack of standardized demographic information). As such, a comprehensive and up-to-date CBO directory will require substantial dedicated resources and regular active outreach by email and phone. Relying on passive updates from physicians (or other end users) is insufficient. Users will lose trust if they find data unreliable. **The AMA urges CMS to keep an initial NDH small, focused, and centered on achievable and measurable goals before expanding its scope.** **Once an NDH is established and proven successful, additional information sources, e.g., CBO, should then be considered with adequate and sustainable investment and data standards.** For instance, in addition to services offered with locations and times, filterable data including languages spoken, special populations served (age, occupation, etc.), payment options or fee scale (free, sliding scale, insurance, etc.), and capacity to see new clients within a certain time would likely be priority next-phase NDH data feeds.

What provider or entity data elements would be helpful to include in an NDH for use cases relating to care coordination and essential business transactions (for example, prior authorization requests, referrals, public health reporting)? • What specific health information exchange or use cases would be important for an NDH to support? • Are there other types of data transactions or use cases beyond those already discussed that would be helpful for an NDH to support? • Are there additional data elements beyond those already discussed that would be useful for these use cases? • Beyond using FHIR APIs, what strategic approaches should be taken to ensure that directory data are interoperable?	**Once an NDH is proven to address provider at location issues, ensure bidirectional exchange of standardized demographic information, and promote automation to reduce the need for human resources, CMS should then consider next phase use cases and data elements.**
The COVID–19 pandemic has highlighted a need for public health systems to be better connected to providers and with each other. Would there be benefits to including public health entities in an NDH? • What public health use cases would it be helpful for an NDH to support (for example, facilitating digital contact endpoint discovery for public health reporting, or to provide	States maintain provider directories, but they often suffer from similar inaccuracies as other sources. CMS should coordinate with states and public health agencies to address directory fundamentals such as standard directory data value sets, standard formats for data submission, and standard categorization for certain data elements. CMS should consider utilizing the Federation of State Medical Boards (FSMB) Provider Bridge initiative which is making physician data available for credentialing purposes during an emergency.[4]

[4] https://www.providerbridge.org/

additional data for public health entities' analytics)? • What data elements would be useful to collect from these entities to advance public health goals?	
Understanding that individuals often move between public and commercial health insurance coverage, what strategies could CMS pursue to ensure that an NDH is comprehensive both nationwide and market-wide? • Are there specific strategies, technical solutions, or policies CMS could pursue to encourage participation in an NDH by group health plans and health insurance issuers offering group or individual health insurance coverage for programs or product lines not currently under CMS' purview?	CMS should pursue policies that encourage data standardization. There is a gap in data quality and consistency that must be addressed before an NDH could be proven successful. **CMS should address directory fundamentals such as standard directory data value sets, standard formats for data submission, and standard definitions and categorization for certain data elements.**
Are there use cases for which it would be helpful for an NDH to support state and local governments? For example, are there specific types of providers, data elements, or technical requirements that would allow for infrastructure planning support, resource allocation, policy analysis, research, evaluation, emergency preparedness and response (such as PULSE), care coordination, planning, establishing partnerships, and determining service gaps?	The FSMB Provider Bridge is an example of an industry collaboration meant to support stakeholders in emergencies.[5]

[5] Id.

• How should CMS work with states to align federal and state policies to allow all parties to effectively use an NDH?	
Are there use cases for which an NDH could be used to help prevent fraud, waste, abuse, improper payments, or privacy breaches? Conversely, are there any concerns that an NDH, as described, could increase the possibility of those outcomes, and, if so, what actions could be taken to mitigate that risk? What specific functionality or use cases, including any not discussed here, would it be helpful for CMS to consider developing within an NDH? What types of data elements would need to be included (or excluded) to support these use cases (for example, licensing, certification, and credentialing)?	Initially, an NDH should focus on the provider at location use case. This should first be proven successful before CMS moves on to additional use cases.
Beyond identifying providers associated with specific organizations, and organizations that may be under the umbrella of a single health system, what other relationships would be important to capture and why?	The term "relationship" needs to be defined. There are varying interpretations of what constitutes a relationship between a physician and a facility. For example, are physicians employed by the facility? Do they have admitting privileges at the facility? Do they have admitting privileges at a facility under the umbrella of the organization? Are they on the medical staff? CMS should work to build a cohesive understanding and method to denote relationship across stakeholders.
We have received feedback that individual providers may not use their individual digital endpoints in many cases where the communications involve patients receiving institutional care. How can we associate group- or practice-level digital contact information with appropriate providers to ensure that data get to the right place?	We note that the definition of "affiliations" has varying interpretations. Organizational affiliation is very complicated and includes employed clinicians, contracted clinicians, and temporary clinicians. CMS should work to build a cohesive understanding and method to denote affiliations across stakeholders. This will be necessary before an NDH could accurately capture and represent group- or practice-level digital contact information.

What are some of the lessons learned or mistakes to avoid from current provider directories of which we should be aware?	Based on the AMA's extensive experience in physician data management, each entity relationship is unique and would factor into a directory's structure. Directory fundamentals must be addressed. These include standard directory data value sets, standard formats for data submission, and standard definitions and categorization for certain data elements. **Successful directory implementations solve clear and measurable gaps in the industry, leverage primary data sources where available, and strictly limit scope creep.** Furthermore, the NDH seems to be similar to the Project Symphony initiative based in California. Project Symphony has spent millions of dollars with little impact on directory accuracy or elimination of redundancies. CMS should consider contacting Project Symphony members for lessons learned.
We solicit comments on key considerations related to data submission and maintenance for potential NDH development:	
How can data be collected, updated, verified, and maintained without creating or increasing burden on providers and others who could contribute data to an NDH, especially for under-resourced or understaffed facilities?	CMS should enlist and collaborate with organizations like AMA, The Council for Affordable Quality Healthcare (CAQH) and others that have extensive experience in collecting and maintaining physician and payer data. An NDH would benefit from utilizing existing physician engagement channels. These trusted industry-operated platforms contain much of the data needed for an NDH and are already adopted by most payers and providers. **CMS should consider platforms that are measured against regulatory and accreditation standards and are verified by or designated as equivalent to primary sources.**
What are current and potential best practices regarding the frequency of directory data updates? What specific strategies, technical solutions, or policies could CMS implement to facilitate timely and accurate directory data updates? How could consistent and accurate NDH data submission be incentivized within the healthcare industry?	There is not a one-size fits all solution for directory data updates. Data erodes at the rate of 24-36 percent per year, yet systematically updating all data types on specific intervals creates additional burden. Data analytics and triggering should be used to determine, verify, and then drive data updates.

The Healthcare Directory initiative and FAST both identified validation and verification as important functions of a centralized directory. What data types or data sources are important to verify (for example, provider endpoint information, provider credentialing) versus relying on self-reported information? Are there specific recommendations for verifying specific data elements?	CMS should initially focus the following factors: • provider at location, and • the status of medical practices being currently open.
Are there use cases where an NDH could provide data that has already been verified to reduce that burden on payers or other entities and, if so, how could that be achieved?	There are several organizations that manage NDH data. For example, the AMA validates information including education, training, and licensure. **CMS should consider leveraging pre-verified data sources trusted by industry.**
What concerns might listed entities have about submitting data to an NDH? We solicit comments on provider delegation of authority to submit data on a provider's behalf: • Outside of CMS, what mechanisms, standards, or processes are currently used to enable provider delegation of authority to submit data? • What challenges, if any, occur in the processes for delegating authority to submit data on behalf of providers or in the processes for submitting directory data on behalf of providers? • What specific strategies, technical solutions, or policies could be implemented to enable delegation of authority to submit data to an NDH?	There are financial and human resource costs associated with collecting and maintaining data. Prior to designing an NDH framework, CMS should conduct a survey of listed entities to gauge the potential resource impact to support an NDH. CMS should consider the technical and workflow limitations of small, solo, and rural physician offices. The AMA supports role-based access management. Any centralized or de-centralized directory should include role-based access to maintain trust, security, and confidence in data.

• Should CMS consider including role-based access management to submit provider data to an NDH, and, if so, what kind of role-based access management?	
Are there entities that currently exist that would be helpful to serve as intermediaries for bulk data verification and upload or submission to an NDH? If so, are there existing models that demonstrate how this can be done (for instance, the verifications performed through the Federal Data Services Hub)?	There are several organizations that manage NDH data. For example, the AMA validates information including education, training, and licensure. The AMA also maintains current and historical data for more than 1.4 million physicians, residents, and medical students—including approximately 449,000 graduates of foreign medical schools who reside in the United States and who have met the educational and credentialing requirements necessary for recognition. This includes active and historical licensure information. We maintain information on over 250 physician specialties; segmented by Primary and Secondary Practice Specialty, and Graduate Medical Training. The AMA includes mortality indicators and maintains a deceased file to protect against fraud and abuse. A record is established when individuals enter medical schools accredited by the Liaison Committee on Medical Education (LCME), or in the case of international medical graduates (IMGs), upon entry into a post-graduate residency training program accredited by the Accreditation Council for Graduate Medical Education (ACGME). IMGs are also identified when they obtain a license from one of the 68 US licensing jurisdictions. As a physician's training and career develop, additional professional certification information is added. The AMA maintains education, training, and professional certification information on virtually all Doctor of Medicine and Doctor of Osteopathic Medicine in the United States, Puerto Rico, Virgin Islands and certain Pacific Islands. **The AMA welcomes the opportunity to provide valuable insight, experience, and support as CMS considers its approach to an NDH.**
We are soliciting comments on technical considerations for a potential NDH:	

What technical standards should an NDH support? Are there use cases for providers accessing an NDH through their EHRs and, if so, what are the technical requirements? What other technical considerations should CMS be aware of?	Prior to designing an NDH framework, CMS should conduct a survey of listed entities to gauge the potential resource impact. CMS must consider the technical and workflow considerations of small, solo, and rural physician offices.
We are soliciting comments on the feasibility of a phased approach to implementation and potential opportunities to build stakeholder trust and adoption along the way:	
What entities or stakeholders should participate in the development of an NDH, and what involvement should they have?	There are several organizations that manage NDH data. For example, the AMA validates information including education, training, and licensure. The AMA also maintains current and historical data for more than 1.4 million physicians, residents, and medical students. This includes approximately 449,000 graduates of foreign medical schools who reside in the United States and who have met the educational and credentialing requirements necessary for recognition. **CMS should consider leveraging pre-verified data sources that are already trusted by the industry.** The AMA is offering support and experience and should participate in the development of an NDH. Moreover, the AMA has several communication channels reaching nearly all the nation's physicians, residents, and medical students. The AMA could assist CMS' outreach campaign and help develop NDH physician educational resources. CMS should also consider CAQH which has extensive experience in collecting and maintaining payer data. The AMA collaborated with CAQH to examine and identify challenges associated with provider directory accuracy. Our research shows that a solid foundation of basic provider directory information is critical for success.[6] This research underscores the need for CMS to focus on directory fundamentals. CMS should also enlist support from the Sequoia Project to support future alignment with the TEFCA.

[6] https://www.ama-assn.org/system/files/improving-health-plan-provider-directories.pdf

What stakeholders could have valuable feedback in the scoping and early implementation processes to ensure viability of an NDH and sufficient uptake across the healthcare industry?	CMS should enlist support and feedback from physicians (including the state and medical specialties), health plans, health systems, EHR vendors, practice management system developers, patients & consumers, clinical registry operators, human and social services providers.
What functionality would constitute a minimum viable product?	**A minimum viable product will solve a few important problems, instill trust, and create a good user experience.** A successful NDH will solve clear and measurable gaps in the industry, leverage primary data sources where available, and strictly limit scope creep. An NDH should be viewed as a "must have" by payers, health systems, medical practices, and public health entities. An NDH should not try to "boil the ocean." An NDH should address provider at location issues, ensure bidirectional exchange of standardized demographic information, and promote automation to reduce the need for human resources. An NDH should be an "update once, propagate everywhere" service. Physicians, for instance, should only need to submit or update information to a single location. Relatedly, entities seeking physician information should find everything needed without having to contact physician offices for additional data or data formatted in a different way. **CMS should use its policy levers to also directory fundamentals. To achieve this, CMS should coordinate, promote, and untimely require:** • standard data value sets, • standard formats for data submission, and • standard definitions and categorization for certain data elements.
What specific strategies, technical solutions, or policies could CMS employ to best engage stakeholders and build trust throughout the development process?	CMS should be clear on its immediate goals and use case(s), set clear performance metrics, and publicize metric performance. It is important for an NDH to unambiguously solve one problem for the industry before prematurely moving on to the next. To build trust, CMS should focus on a single use case and achieve success in key performance dimensions.
What use cases should be prioritized in a phased development and implementation	To avoid creating 'yet another channel,' and inadvertently increasing administrative burden, **CMS should leverage data already provided by physicians.** Trusted industry-operated platforms are already adopted by most payers and providers and contain much

process for immediate impact and burden reduction?	of the data needed for an NDH. CMS should collaborate with these industry-operated primary sources. This would accelerate NDH adoption and reduce burden on physicians.
What types of entities and data categories should be prioritized in a phased development and implementation process for immediate impact and burden reduction?	An NDH should address known gaps in the industry, such as providers at more than one location, bidirectional exchange of standardized demographic information, and automation to reduce human resources. CMS should use its policy levers to coordinate, promote, and untimely require: • standard directory data value sets, • standard formats for data submission, and • standard definitions and categorization for certain data elements.
How could human-centered design, including equity-centered design, principles be used to optimize the usability of an NDH?	NDH development should be rooted in data security and health equity innovation. NDH development should be rooted in data security and health equity innovation. The AMA, along with 14 other organizations, established the In Full Health Learning and Action Community to Advance Equitable Health Innovation initiative. This community is committed to putting equity at the center of health innovation. An early deliverable has been the Equitable Health Innovation Solution Development toolkit. The toolkit provides a roadmap to engage communities that have been historically marginalized in the design, development, testing and evaluation of health innovations to ensure positive health outcomes and avoid or mitigate harm. The toolkit was developed by health equity, information systems, and clinical experts to optimize the usability of health care systems.[7] The AMA is encouraged by CMS' interest in health equity by design. **We recommend that CMS consider policies that align and promote the actions outlined within the toolkit.**
What issues should CMS anticipate throughout an NDH system development life cycle? • Development (for example: timelines, technologies). • Implementation (for example: phased roll out, obtaining buy-in). • Operations (for example: updating content, access, and security).	CMS should consider how to address the following issues early in an NDH system development life cycle: • **Lack of primary sources for verification.** There are no primary sources for provider at location data. This should be a priority for CMS. • **Nuances due to contracting and varied relationships.** Physician-payer affiliation is dictated by contracts. These contracts are often complicated and may contain specific clauses around the percentage of patients seen at any one location.

[7] https://www.ama-assn.org/delivering-care/health-equity/toolkit-shows-how-developers-can-link-health-equity-innovation

• Maintenance (for example: updating technologies, ensuring data accuracy).	• **Data churn and data reconciliation.** There is not a one-size-fits-all solution for directory data update frequencies. Data erodes at the rate of 24-36 percent per year. • **Implementation buy-in.** EHR vendors may see an NDH as a threat to their business model.
We are soliciting comments on risks, challenges, and prerequisites associated with implementing such a directory:	
What technical or policy prerequisites would need to be met prior to developing an NDH?	An NDH should be accessible in a meaningful way to physicians using certified EHR technology.