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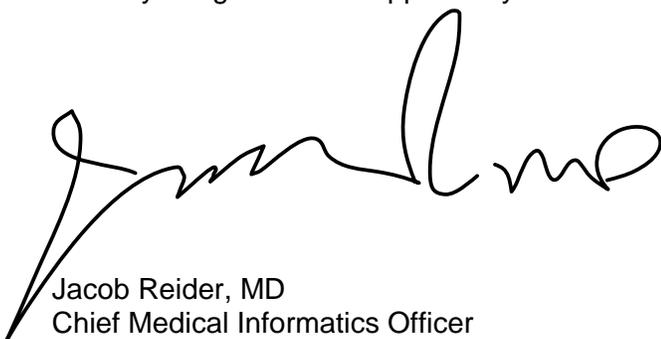
Thank you for this opportunity to provide testimony to the ONC Standards Committee on the subject of value sets and subsets. My comments today represent three perspectives.

1. I am a practicing family physician and EHR user.
2. I am Chief Medical Informatics Officer for Allscripts-Misys Healthcare Solutions, a company with over ~50,000 active physician users of our four EHR applications. As a product of several mergers and acquisitions, the Allscripts user community is in fact a microcosm of the HIT landscape as a whole, which gives us a unique perspective in the domain of clinical vocabularies, value sets and subsets.
3. As an elected member of the Executive Committee of the EHR Association, I work closely with over fifty EHR vendors, and serve as the Chair of the EHRA Workgroup on Quality and Clinical Decision Support. In this role, I have represented EHRA as a member of the NQF HITEP Quality Dataset Workgroup, and currently serve as a member of the AHRQ Clinical Decision Support Technical Expert Panel.

From each of these perspectives, I offer some context for my responses to your questions.

- a) It is imperative that the ambiguity and of governance, content, and creation of value sets be promptly replaced by crisp, clear ownership. This is a once-in-a-generation opportunity to lay the foundation for the future of our industry. Without absolute clarity, this extraordinary opportunity to improve the care of millions of Americans through implementable, adoptable clinical decision support, quality measures and semantic interoperability will be squandered.
- b) ONC is well placed to recommend this one owner.
- c) EHR vendors compete in the marketplace on many levels. We have no interest in competing with each other on foundational matters that we all support. Do Dell and HP compete on which company's products plug into a 110 volt outlet? Of course not. EHR vendors don't want to compete on who can license, consume or deliver SNOMED-CT, LOINC, RxNorm, or subsets thereof. The rising tide should lift all boats.

Thank you again for this opportunity



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## II. Questions to be addressed in Public Comments

- 1) Who should determine those that are needed?
  - a. I wonder if this question might be better expressed as: “who should make the final determination?” There are many stakeholders: quality measure developers, researchers, pharmaceutical manufacturers, hospitals, labs, lab system vendors, EHR vendors .. and so on. Any and all of these stakeholders will have interest in contributing value sets and subsets. What we need is a “final call” on whether a new value set is required – or whether (as is all too frequently the case) the new item is either identical to (or very similar to) an existing value set of which the authors of the new set/subset had no knowledge. These problems are often solved n times. Many wheels are being re-invented on a daily basis.
  - b. There are four primary domains in which value sets and subsets are required: Clinical Documentation, Clinical Decision Support, Interoperability (transport of clinical information in a manner that can be “understood” to mean the same thing by both parties), and Quality Measurement.
  - c. There should be a defined owner for the harmonization and coordination of the definition and maintenance of the appropriate value sets – with appropriate funding allocated this one owner. Ideally, this one owner should have experience in this domain. Candidates might therefore include CDC (PHIN VADS) or AHRQ (USHIK) or NQF (the Quality Data Set) or HL7, NLM, IHTSDO or others. One might foresee an RFP from ONC on this topic, with the contract being awarded to the organization with the proposal best aligned with the criteria, such as:
    - i. An open process by which individuals, organizations, companies, specialty societies, quality organizations, payers, etc., can actively contribute to ONE central repository of value sets and subsets.
    - ii. Appropriate experience and subject matter expertise to manage the political, technical and semantic challenges that will arise.
    - iii. A clear plan to create and maintain a registry so that there is one authoritative location where anyone can find/consume/download the most current value sets.
    - iv. A clear plan to create and maintain a process (both technical and functional) that would facilitate the creation of new value sets, identification and resolution of redundant value sets, as well as administration of the various metadata elements such as versioning and mapping.
- 2) Who should produce them?

Anyone who wants to produce a value set or subset should be able to do so. Submissions for modifications or additions should follow a well-defined process that would need to be both transparent and prompt. In cases of national importance such as the identification of a new public health need, or a new disease/pathogen, appropriate processes would need to be in place so that such concepts could be added to existing

value sets and/or new value sets created immediately. In such a scenario – EHRs could instantly “know” about new clinical concepts. How long did it take for most EHRs to understand what “SARS” was? We did better with H1N1 .. But how far closer to perfect can we get?

- 3) Who should review and approve them?
  - a. See my response to question #1.
- 4) How should they be described, i.e., what is the minimum set of metadata needed?
  - a. Name
  - b. Description
  - c. Code set
  - d. ID/OID
  - e. Version
  - f. Owner
  - g. Alias (n)
- 5) In what format(s) and via what mechanisms should they be distributed?
  - a. They should be machine readable. Today, this most likely means that the best method for doing so would be to use XML. This would permit both machine and human readable expressions (using XSLT) of the same object.
  - b. They should be distributed using a publicly available repository. This would take the form of web-based systems that could be navigable by humans. There should also be an API to permit automated updates, submissions, etc. While there may be calls for a distributed system, and a central repository that houses only metadata, I would argue that such a model is too complex and is, in fact, unnecessary.
- 6) How and how frequently should they be updated, and how should updates be coordinated?
  - a. At least annually. The “owner” of a value set would be required to update (or attest to the fact that an update is unnecessary) at least annually, but as frequently as they like. While there may be concerns that some systems and organizations cannot accept updates too frequently, there would be no requirement here that requires everyone to subscribe to every update, much as I don’t have to read the newspaper every morning. Nonetheless, it is available if I choose to make the investment.
- 7) What support services would promote and facilitate their use?
  - a. A simple, clean, central implementation as described above
  - b. Mapping tools to assist stakeholders in the “localization” of standard value sets so local or proprietary synonyms can be easily added.

- 8) Do you have other advice or comments on convenience subsets and/or value sets and their relationship to meaningful use.

As we review the topics of value sets and subsets, I can't help but consider the challenges that we face with the constituents of these sets. That is, the vocabularies themselves. Consider that there exist many specialized vocabularies with varying degrees of specificity, licensing restrictions, usability and (most importantly) adoption.

Consider:

- a) Which are the most widely adopted vocabularies? ICD-9 and CPT. Why? Nobody gets paid without them.
- b) Which have been poorly adopted? LOINC and SNOMED-CT. Why? There is insufficient incentive. Laboratories have no incentive or requirement to use LOINC codes, and (until 2013) EPs and Hospitals have had no incentive to use SNOMED-CT
- c) Commercial vocabularies may be available that in fact could significantly accelerate the development, maintenance and administration of value sets and subsets. Two of these companies have representatives testifying at this session today. When HHS (through NLM) invested \$32.4 Million to license SNOMED-CT, the pavement was laid for the advances we hope to realize over the course of the next half-decade.

I would argue, however, that this should not have been the last time that the Federal Government makes such a substantive contribution to the semantic framework of HIT. Intelligent Medical Objects (IMO), Health Language Incorporated (HLI) and Medicomp all have extremely robust intellectual property (with rather little redundancy) in the form of both content and processes. The products of these companies, if licensed for public use in the United States, could significantly accelerate the overlapping and incomplete efforts that USHIK, PHIN VADS and NQF QDS represent. So while this suggestion may seem to be somewhere out in left field, I would argue that this is just the sort of gasoline that we need to pour on this fire!

- a. IMO's interface terms represent complex clinical concepts in words that physicians use – and map them to the reference and administrative terms that are necessary. For example, I recently learned that physicians in some regions often refer to a condition called “winter itch,” which is impossible to find in ICD-9. IMO has mapped this term to a preferred ICD-9 code (698.8 - Other specified pruritic condition) and a SNOMED-CT concept (201025002). When physicians first see and experience the use of interface terms they cheer out loud. How can we accelerate adoption? By giving physicians stuff like this that they can be excited about!
- b. Medicomp's Medcin® closes two significant gaps that provide daily challenges for systems and system designers to appropriately document clinical information. First, Medcin represents thousands of clinical findings that are simply not represented in SNOMED-CT. Second, Medcin provides unique codes for clinical findings that would require post-coordination with SNOMED-CT, thereby reducing the need for

- post-coordination and significantly improving the simplicity of information systems and knowledge transfer.
- c. HLI's Language Engine is a robust, flexible framework that could facilitate the rapid development, mapping and maintenance of vocabularies and value sets.
  - d) Finally, I would be remiss if I didn't mention the elephant in the room. While our colleagues at the American Medical Association do an extraordinary job maintaining and managing CPT, I implore HHS to work creatively with the AMA to find (and fund) a way for this valuable resource to be licensed to stakeholders in the United States. As it now stands, any value set that includes a CPT code could have adoptability hurdles due to licensing concerns. This barrier to adoption cannot be overlooked.