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**Testimony
Of
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To
Healthcare Information Technology Committee
Clinical Operations Workgroups-Task Force on Vocabulary
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Thank you very much for the invitation to testify in front of this panel. My name is Dr. James Ingram, I am the Chief Medical Officer for Greenway Medical Technologies, which is a nationally-recognized health IT leader and offers a Certification Commission for Healthcare Information Technology ([CCHIT](#)) certified ambulatory electronic healthcare record (EHR) which has been solely focused on this industry since inception in 1998. We support over 1900 ambulatory practice sites across the nation representing close to 20 million patients on record in 30 specialties. Greenway supports very high adoption rate of our certified EHR with more than 90% of clinicians actively using our system at the point of care.

I appreciate the opportunity to address the vocabulary task force today focusing on convenience and value sets. As a physician, with a long clinical career in addition to being involved in the use and design of two EHRs over the past 17 years, I have become convinced of the importance for incorporating a standardized clinical vocabulary into the EHRs. The challenge for an EHR vendor has been to incorporate a vocabulary at the point of care which can adequately capture the essence of the patient's problems and medical history.

I sit before you today, not as an expert in vocabulary concepts, but to share my expertise in finding a solution for improving the text to codified data requirements for documenting a patient's visit. As with many ambulatory vendors, we have relied on ICD-9 and CPT-4 billing vocabulary codes that can be modified locally to handle our documentation and reporting requirements in practice.

From our start in the EHR industry over twelve years ago, our focus has been on developing an integrated and interoperable solution that clinicians would use in a meaningful way long before “meaningful use” morphed into its current proposed definition. With increasing quality reporting needs, the requirement for a standardized clinical vocabulary becomes even more important.

Despite having ready access to the SNOMED lexicon through the Unified Medical Language System (UMLS), we found it challenging to fully implement this vocabulary into our particular design as others have also found. What we have learned is that this controlled medical vocabulary still had its challenges with pre- and post-coordinating concepts as well as search tools at the point of care.

The translation of text-based concepts to codified concepts has been a challenge. We, at Greenway, explored the two most common lexicons, only to find they did not fully fit the needs of the clinicians using our EHR. Subsequent to that, we explored the idea of developing a proprietary vocabulary, but felt that the cost and resource requirements were beyond our capabilities at that time.

Because of the difficulty using standard reference terminologies at the point of care, we have implemented a modified clinical vocabulary based on International Classification of Diseases-9th revision, clinical Modification (ICD-9-CM), Current Procedural Terminology-4 (CPT-4), Healthcare Common Procedural Coding System (HCPCS) and First Data Bank (FDB).

Over the last year, we have focused more of our attention on developing a clinical interface vocabulary through a partnership with an experienced medical lexicon company. By using SNOMED as a base, along with other reference vocabularies, and the ability to add local concepts from our sites to our master vocabulary based on SNOMED mapping we will then make the system markedly more effective in reporting clinically relative data.

When looking at the vocabulary requirements for an EHR, perhaps the biggest challenge is having a system that provides clinical interface terminology functionality. We have come to understand that this is the most reasonable way to provide increased usability for any member of the clinical team. With the interface terminologies, there will more effective use of the reference terminologies to capture the appropriate clinical information. This is more than just convenience sets in my opinion, but having synonym terms that enhance the convenience set utilization at the point of care. Additionally, when dealing with different types of medical practices and specialties potentially using an EHR, we see the importance of recognizing the flexibility of grouping different convenience sets.

Another factor in the equation is the movement towards Personal Health Records (PHR). A PHR will also require a patient interface terminology. This vocabulary would be more focused to lay-related medical terms which would convert to clinical terminologies and subsequently to reference terminologies.

As with most EHRs, the preference would be to have all practices using the same lexicon so that semantic interoperability could be achieved. We welcome a decision to have a centralized entity which could manage and support a suitable standardized vocabulary mapped to clinical and patient interface terminologies that can be used across the collective medical environment. From our participation with Integrating the Healthcare Exchange ([IHE](#)), we are excited about some of the initiatives as it relates to Sharing Value Sets. The idea that numerous standardized medical vocabularies would be connected to a value set repository where EHRs could easily access the latest sets would significantly improve the EHR advancement.

Specifically, I would now like to address several of the questions that were proposed by the panel.

1) Who should determine subsets and/or value sets that are needed?

With the numerous reference terminologies currently available we suspect the vast majority of subsets or values sets have already been identified. There are mechanisms in place for submission of candidate concepts to be added to the respective reference lexicon.

As an EHR vendor, we would look towards the terminology organizations to recognize the needs of current day practice of medicine to provide a frequently updated vocabulary for assimilation into the electronic healthcare record industry. From our perspective, it does not appear that we are short on terminologies only that we have a challenge in a clinical environment to adequately use the terms to capture the essence of the clinical encounter with the patient.

2) Who should produce subsets and/or value sets?

We would look towards the reference terminologies and consensus standards entities to provide.

3) Who should review and approve subsets and/or value sets?

The subsets and/or value sets that are developed need to be broadly available for many stakeholders to contribute their suggestions and revisions

4) *How should subsets and/or value sets be described, i.e., what is the minimum set of metadata needed?*

We would look towards a HITSP type organization for this.

5) *In what format(s) and via what mechanisms should subsets and/or value sets be distributed?*

Currently, we can consume XML into our product. However in the future there is a possibility of moving towards the Sharing Value Sets (SVS) profile through an Integrating the Healthcare Enterprise (IHE) value set repository.

Our work within IHE has given us an opportunity to appreciate that this approach would work well with multiple terminologies providing their value sets through a value set repository where EHRs can consume them into our applications.

6) *How and how frequently should subsets and/or value sets be updated, and how should updates be coordinated?*

Time is critical when these concepts become available they must be distributed to the EHR industry in quick and frequent manner. Because these will be used at the point of care, they will have to be frequently updated until the vocabulary gets built out adequately to handle routine office visits.

7) *What support services would promote and facilitate their use?*
No Suggestions

8) *What best practices/lessons learned have you learned, or what problems have you learned to avoid, regarding vocabulary subset and value set creation, maintenance, dissemination, and support services?*

Approximately 4-5 years ago, our initial focus regarding controlled vocabularies was with the laboratory results using LOINC observation codes. We came to appreciate that across the spectrum of clinical laboratories, there was a marked lack of reporting LOINC codes in their electronic reports via Extensible Markup Language via Health Level 7 messaging (XML/HL7).

We focused initially on two of the major national labs, LabCorp and Quest Laboratories. During our evaluation we realized that even within their respective systems that consistency of LOINC reporting was a problem. Therefore, we approached this in a different manner, basically the clinical interface terminology approach. The laboratory companies provided their LOINC mapped results compendium and we used this as a primary comprehensive value set. Subsequently, we compared the frequency information supplied by the companies as well as surveying our sites to develop a typical clinical lab subset applicable across our 30 specialties that we service.

Then for any other labs that were interfaced with our system who did not map their results to LOINC codes we provided a utility at the practice level for them to manual map the results to their equals in the two mapped compendiums or to create a new result term.

Of course, if a lab provides us a mapped compendium, then this eliminates working required at the site to match the same lab result across different laboratory vendors for our user base.

9) *Do you have other advice or comments on convenience subsets and/or value sets and their relationship to meaningful use?*

None

10) *What must the federal government do or not do with regard to the above, and/or what role should the federal government play?*

I see the federal government playing a role of a monitor of the value sets. There are several agencies or organizations that have a role in development of these set.