**Domain Analysis and Proposal of Disabilities Ontology**

**Introduction**

The mission of this ontology is to improve Champaign County’s system of care for persons with disabilities so as to avoid incarceration, reduce recidivism, and promote rehabilitation. The language of disability is incredibly complex and can differ depending on the model (e.g. medical vs. social) and the individual’s own identity. Because of this, disability cannot be reduced to a single dimension, such as a medical condition. It also cannot be reduced to a single level of intervention. Some persons with disabilities will require medical intervention, some will need rehabilitation or counseling, some will need help finding employment, and some will need assistance in dealing with discriminatory environments.

**Statistics**

Below is an overview of CCSO data about the 1,323 individuals listed as “disabled”:

* 56% are no longer in high school/GED program
* 93% are unemployed and did not specify themselves as students
* 85 sentenced to Illinois Department of Corrections (IDOC) despite evidence that “incarcerating a person with a serious mental illness and providing treatment in a correctional setting costs nearly twice as much as providing treatment within the community (1)”
* 1063 unaccounted individuals under custody class (blank cells)
* At least 49% of those disabled committed misdemeanors or non-felonies
* Over 60% of individuals return to society, but continue to face unemployment (out of jail but not into treatment). According to the county, “once persons suffering mental illnesses [or other disabilities] are released from jail, there remains an inadequately coordinated system to assure that they receive the treatment necessary to reduce recidivism.”

**Goals of Ontology**

Specially, it is my hope that this ontology will assist with the following:

* Train law enforcement on different dimensions and nuances of disability. This could include classes and attributes such as:
  + Disability finding (mental, intellectual functioning, personal care, etc.), environmental factors affecting disability, whether disability is registered or observable, severity of disability, disability etiquette, vocabulary used by actual people with disabilities
* Link to other ontologies for associated information
  + Ontologies related to employment and existing programming
* Reduce the tendency for providers and units of government to work independently

**Existing Vocabularies**

There are several manuals, definitions, and glossaries that will guide the creation of this ontology:

* Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
* Disability Evaluation Under Social Security
* International Classification of Functioning, Disability and Health (ICF)
* Paraquad’s “Words with Dignity”
* Vanderbilt Kennedy Center, Vanderbilt University’s behavioral and mental health checklists
* SSA Plan to Achieve Self-support
* Disability Benefits 101 state-specific glossaries
* SNOMED CT

In particular, a great example of classes and properties is present in the OWL formatted “International Classification of Functioning, Disability and Health”, known more commonly as ICF. Its description states that it is a “classification of health and health-related domains. These domains are classified from body, individual and societal perspectives by means of two lists: a list of body functions and structure, and a list of domains of activity and participation. Since an individual's functioning and disability occurs in a context, the ICF also includes a list of environmental factors.” Below is a snippet of this categorization.

