# RAPID AND THE ANATOMY TASK FORCE

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THE NEED FOR A COMMON ANATOMIC LIBRARY

- It seems that anatomy should be a straightforward concept to define electronically; however, like the human body, there are variations within medical practice that make the exercise much more complicated

- Lack of clearly defined structured data content in medicine creates major interoperability (and potentially safety) issues

- There is no obvious single entity responsible or accountable for defining the human anatomy needed for interoperable and transformative health IT; however, without this content, one is hard pressed to imagine actually achieving this goal

Source: https://www.bookdepository.com/author/Vincent-Perez
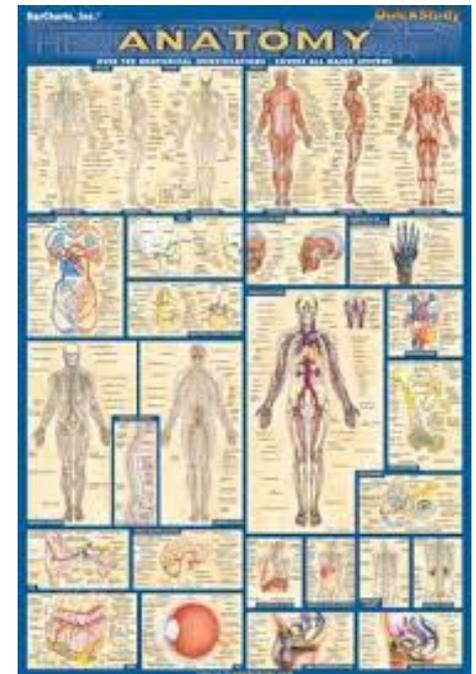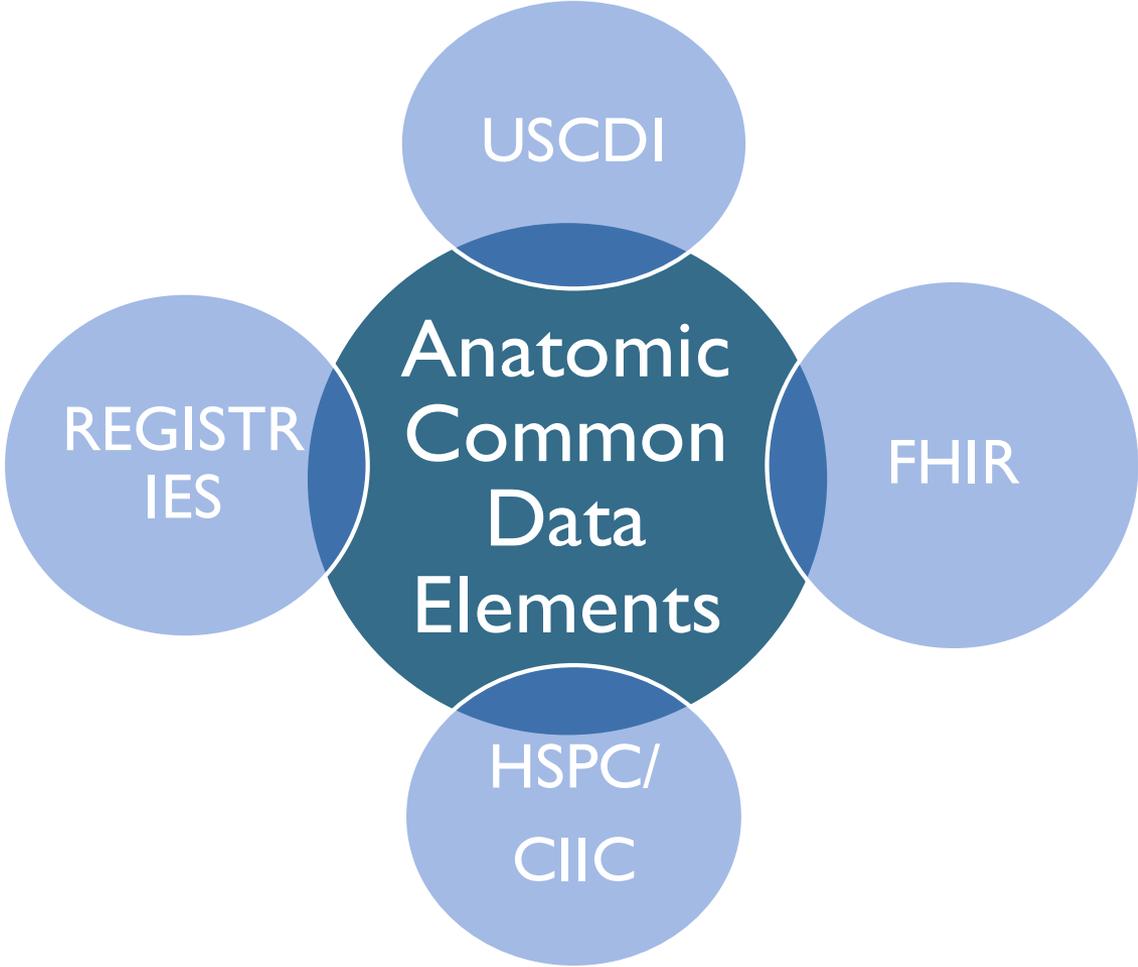
REGISTRIES

- Traditional registry data definitions were siloed and based on specific functional needs related to a specific clinical specialty
- Only recently have some registries and organizations begun to consider the need to harmonize and unify content definitions for clinical terms–critical for coordinated registry networks and moving towards data extraction with the push of a button
- The Pew Common Healthcare Data Interoperability Project recently convened on the need for inter-registry interoperability (http://dcri.org/registry-data-standards/)

FAST HEALTHCARE INTEROPERABILITY RESOURCES (FHIR)

- FHIR is a rapidly solidifying and implemented standard for easy data extraction and exchange
- Relies on traditional internet-based data formats and languages including the use of APIs, required in 2019
- FHIR is not a content standard
- Registries on FHIR project seeks to create content intended for shared use by registries, based on content developed by clinicians, clinical societies and registries capturing data from real point of care systems

FHIR: BODY SITE VS BODY STRUCTURE

| bodySite Attribute	Body Structure Resource
Conceptual	Concrete instance
Not stand-alone	Stand-alone
Data type (often just a single coded property, but it should be a reusable complex structure, above)	Resource similar to other entities like Organization, Location, Device – also somewhat similar to Condition
Cannot include a patient	Must include a patient
No associated statement time or provenance	Has statement time and other provenance elements
Does not have a morphological abnormality code	May include a morphologic abnormality (disorder) code
Describes an anatomical location abstractly, such as "entire left foot"	Describes a particular location in a particular person, such as "Mark's entire left foot" or a morphology, such as "The abrasion on Mark Kramer's entire left foot"
Not independently trackable over time.	Has an identifier, persists, and trackable over time.
Useful as a property of condition, observation, procedures, etc.	Useful for tracking a location on the body or abnormality that is subject to repeated observations over time
Examples: entire left foot, cardiac wall structure, skin structure of the neck (any SNOMED body structure code)	Examples (from FHIR R4): _a fetus within systems that choose not to treat a fetus as a Patient_, _a specific tumor or lesion that will have multiple observations and/or procedures performed on it over time_, _skin patches or other portions of a person or animal that are a focus of a clinical trial and that are subject to repeated observations and/or procedures over time_
Represents an anatomical location	_Possesses_ an anatomical location
Anatomical location should come from SNOMED body structure hierarchy	Anatomical location should come from SNOMED body structure hierarchy
Usually pre-coordinated, but can allow modifiers and extensions for post-coordination	The location is usually pre-coordinated, but can allow modifiers and extensions for post-coordination
No start (onset) and end (abatement) dates	A body structure (such as a wound) could have a start and end dates (although FHIR doesn't include those attributes) – hence the analogy to a Condition – trackable over time.

HEALTH SERVICES PLATFORM CONSORTIUM (HSPC)

- HSPC is a health IT community organization that seeks to address roadblocks to interoperability
- The Clinical Information Interoperability Council (CIIC) is a clinician-led project that seeks to create, harmonize, disseminate and implement electronic common data elements that support evidence-based healthcare practices in the field and downstream use cases
- https://healthservices.atlassian.net/wiki/spaces/CIIC/overview

US CORE DATASET FOR INTEROPERABILITY (USCDI)

- Originally the (Meaningful Use) Common Clinical Dataset, required for exchange at transitions of care
- Supported by the 21st Century Cures Act which also requires specialty content to be certified
- USCDI creates a framework for annual updates to expand the data classes
- In reality the USCDI is a combination of data elements and data class requirements with variable levels of granularity
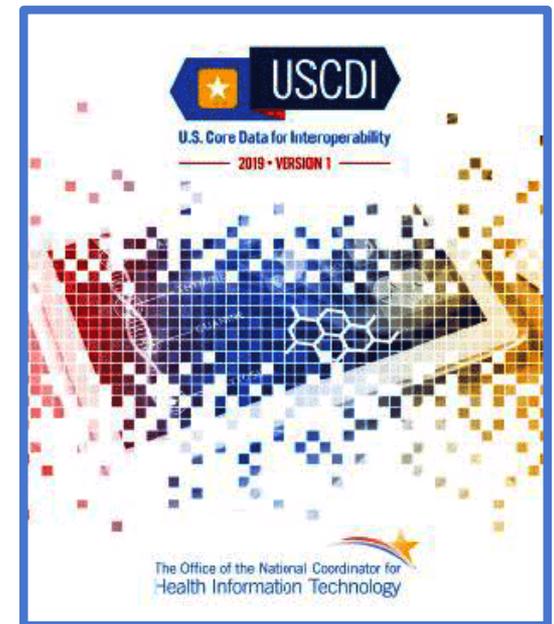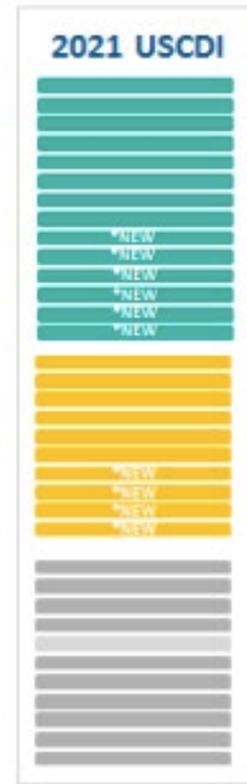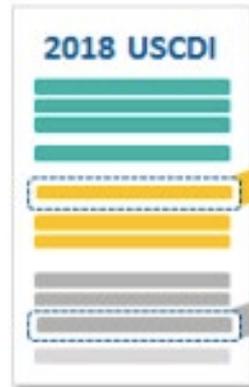
Graphic 1: USCDI Expansion Process

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- In order to understand device usage, placement, and outcomes, one needs to know exactly where the device is implanted (and ends up) to facilitate accurate comparisons

- RAPID does not include an anatomic lexicon in the way that a common data element could be defined

- Thus, for RAPID, these data elements are needed to record and compare where a peripheral vasculature a device was used reliably

  - E.g. Outcomes can be quite different comparing treatment of a short stenosis versus a long total occlusion, even in the same vessel segment

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- Because the RAPID registry scope of work is part of a larger ecosystem, the RAPID team therefore proposed to bring together registries to create a meta-dictionary of anatomic common data elements

- The initial proposed scope is the area of vascular anatomy because of its role in interventions (and because it can be addressed using imaging)

  - Scope for RAPID must eventually include development of a vascular tree along with shared metadata (allowing for lesion descriptors) – these should be generalizable to the entirety of the vascular tree (cerebral, arm, aorta, vein, heart, etc.)

- RAPID has proposed to create a catalog of all the anatomic terms and definitions in our partner registries as an initial step towards harmonization

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- The VANGUARD registry project has just completed a venous anatomy map that will be included in the scope

- A team of experts in all interested or related scopes of practice will be asked to participate in harmonization and codifying the concepts for shared use

- The concepts will then be both pushed back to registries for incorporation as shared electronic definitions as well as to shared repositories and data sets, most notably including the USCDI

- Hopefully, this project will be just one part of a larger effort across the community to define and create reuse of a shared dataset for the human anatomy

THANK YOU

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