

CPT Code Automation



Elements of Automation

- Range of Complexity
- Assumed Context
- Code Structure
- Multiple Codes Needed

Assumed Context 1

Code	Description
D7852	Disc repair
D7865	Arthroplasty

The D (dental) codes provide context for the descriptions – they are understood within the oral environment

This is handled by context switching and hierarchy switching – Arthroplasty becomes Dental Arthroplasty, Discectomy becomes TMJ Discectomy

Assumed Context 2

Code	Description
84430	Thiocyanate
84590	Vitamin A

Code numbers within the range 80000-84999 indicate a Medical Chemistry test – if no source is given, blood is assumed

Code Structure 1

Most common form:

Object, Property, Count

Manual wheelchair accessory, antirollback device, each

Some codes have different form:

Safety vest, wheelchair

Shock absorber for manual wheelchair, each

Code Structure 2

Some codes have a forward/backward structure:

Wheelchair accessory, adjustable height, detachable armrest, complete assembly, each

“Adjustable height” refers to the armrest – that is, it is read forward, with armrest read backward as a “Wheelchair accessory”.

Wordgroups can handle this, as they look forward for a target, but how to handle it when we are unaware of the concept of an “adjustable height armrest”?

Code Structure 3

Wheelchair accessory,

adjustable height,

detachable armrest

We would need to have sufficient modelling to be able to determine which is the more likely object to be described as “adjustable height”. Or we could use the thousands of codes as a source of knowledge

Detachabile, adjustable height armrest

Multiple Codes Needed 1

There are many cases where several codes need to be analysed to understand what one code means.

A simple case:

Code	Description
84295	Sodium; serum, plasma or whole blood
84300	Sodium; urine
84302	Sodium; other source

“Other source” only becomes meaningful knowing sources already listed

Multiple Codes Needed 2

Code	Description
E1002	Wheelchair accessory, power seating system, tilt only
E1003	Wheelchair accessory, power seating system, recline only
E1006	Wheelchair accessory, power seating system, combination tilt and recline

“Tilt only” is understood to mean, “tilt, not recline”

Why Word Searching Won't Work 1

V2410	Variable asphericity lens, single vision, full field, glass or plastic, per lens
V2430	Variable asphericity lens, bifocal, full field, glass or plastic, per lens
V2499	Variable sphericity lens, other type

Here, “variable sphericity” is the same as “variable asphericity” (variable sphericity implies asphericity)

Trying to find “other type” of sphericity lens will be difficult

Why Word Searching Won't Work 2

Code	Description
A4641	Radiopharmaceutical, diagnostic, not otherwise classified
A4642	Indium In-111 satumomab pendetide, diagnostic, per study dose, up to 6 millicuries

The “not otherwise specified” precedes the one specified, and uses a parent – “radiopharmaceutical”

The use of a parent strongly suggests we should do these last, after the other codes in the particular context, so we already have the parents of the other code objects.

Possibilities

1. Keep searchable list of code descriptions (necessary for “not otherwise specified”)
2. Keep alphabetical list of all possible Wordgroups
3. Use Google (too ubiquitous – match almost anything)
4. Modelling

Need to do 1 anyway – use context for code descriptions – radiology, dental, vision, etc. – fall back on modelling

Missing Commas

High strength lightweight wheelchair, detachable arms desk or full-length, swing-away detachable elevating legrests

A comma is missing here – “desk” refers to arms.

The plural noun is an indication that the following word (a noun) may refer to it, the conjuncted adjective confirming it (but a leg rest could be “desk or full-length”). Fortunately, another code has “fixed full-length arms”, no code has “full-length legrests”.

No Time To Learn

The codes have been written by experts in their fields – one cannot hope to learn the meaning from the code alone, using grammar and simple properties of the objects.

Power wheelchair accessory, head control interface, contact switch mechanism, nonproportional, including all related electronics, mechanical stop switch, mechanical direction change switch, head array, and fixed mounting hardware

Readers are expected to be experts too. The system is going to need to know a lot about wheelchairs before reading the codes