

# FHIR for Medication Definition Connectathon Track

**STARTS 30 minutes later than on main  
agenda at 8:30 PST (4:30 GMT)**

Rik Smithies

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# Acknowledgements

- Lots of people!
- Hugh Glover (Leader of the Track Leads), BlueWave and Vulcan
- Peter Bomberg (also Track Lead, unavailable), HC, and now Steven Bednikoff
- Andrei Edu, EMA (and others at EMA)
- Smita Hastak, Catherine Hosage-Norman, FDA (and others)
- HL7 staff, especially Sandy Vance
- You for coming
- Lots of others who supported the creation of the resources that we are testing, and are using them in the real world

## Track Lead

### Rik Smithies

- Consultant, NProgram Ltd. (UK)
- Technical Chair, HL7 UK
- HL7 International Standards Governance Board
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## Aims of this meeting

- Orientation
- Explain the overall aim of the Track
- Get to know each other and what people want to achieve
- See what software or data has been brought along, or may be developed
- Some background and scene setting, but not a tutorial
- Get people to a stage where they can start working, and know where to go for help etc.
- The track page is: <https://confluence.hl7.org/display/FHIR/2021-01+Vulcan+-+Medication+Definition>

## Aims of this Track - Primary track aims

- Find what in the current set of FHIR resources for Medication Definition works with real data, by real implementers

<http://build.fhir.org/medication-definition-module.html>

- FHIR data

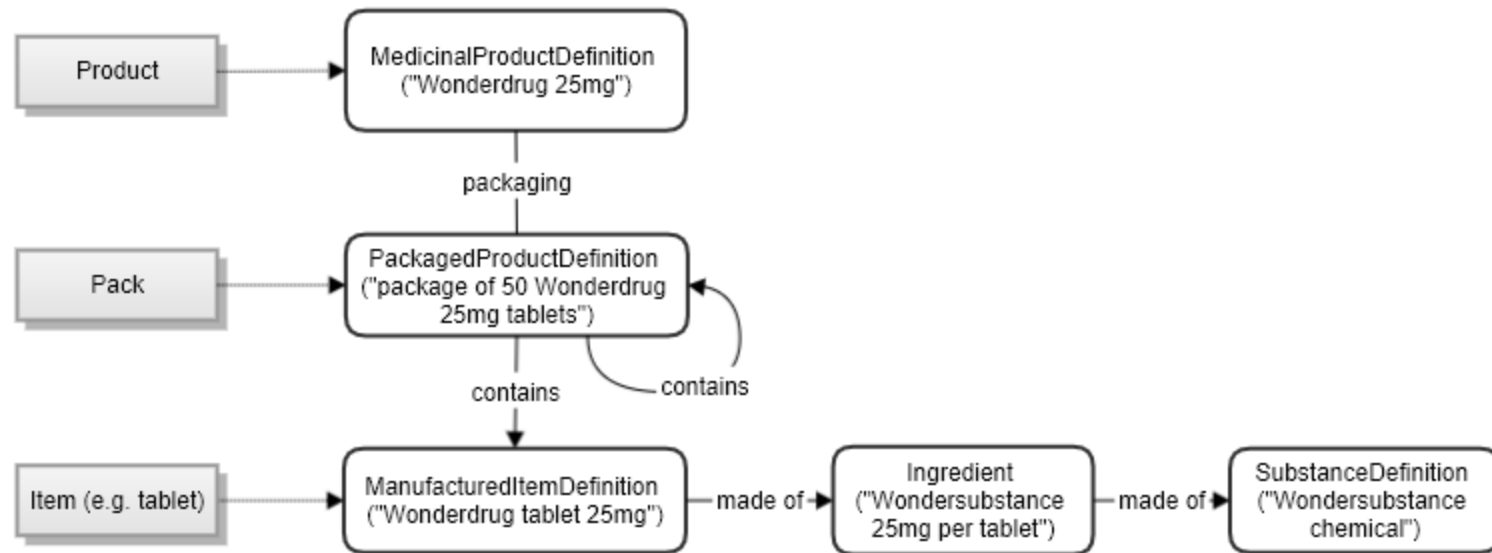
- Create it (or it bring along), based on "real" data (realistic, not necessarily real, for security reasons)
- Exchange, upload, download, edit, share, FHIR data to a "public" server (or several servers)
- Log what parts of the FHIR resources we are using, what works and what does not, identify gaps.

## Medication Definition in FHIR

- Representation of details about medication *products*.
  - Not actual patient data or prescriptions
- The "full picture". Potentially any (intrinsic) information about the products themselves, and their available packs and the packaging details of those packs, and the details of the actual tablets, ingredients, indications, contra-indications etc.
- See overview here: <http://build.fhir.org/medication-definition-module.html>
- Also a presentation/tutorial video:
  - [https://www.youtube.com/watch?v=EohjSWrNcq8&list=PLKuZNI94tzWZ4zs\\_eQ2NLU7mLDdgmQIS5a&index=55](https://www.youtube.com/watch?v=EohjSWrNcq8&list=PLKuZNI94tzWZ4zs_eQ2NLU7mLDdgmQIS5a&index=55)

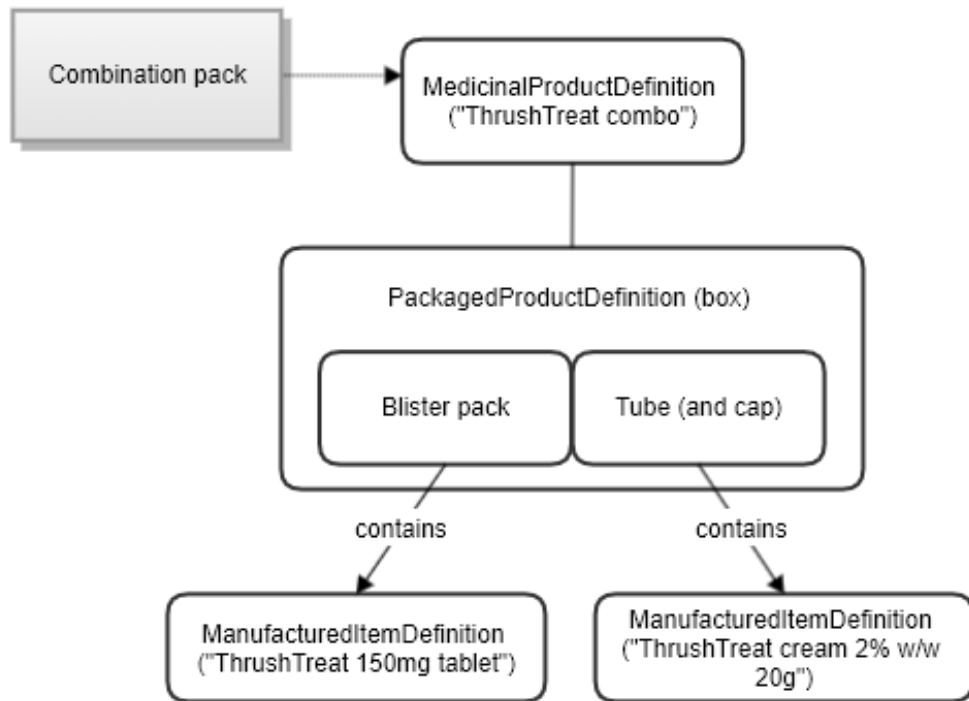
# Medication Definition in FHIR

The model is like this:

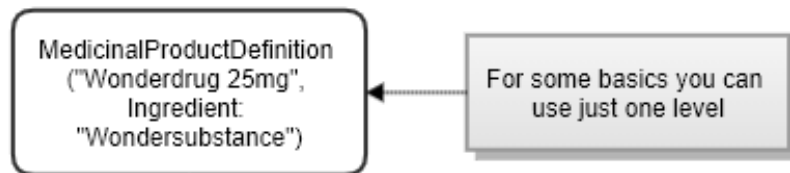


## Medication Definition in FHIR

A complex instance may be like this:



But also a simple one like this:



Or any level in between. And these can be combined with other resources to represent manufacturing processes etc.



# The FHIR Process

- FHIR aims to be agile
  - Design, build (the spec, then code that uses it), test, fix, repeat
  - Keep going until a good proportion of *real user requirements* are covered
- What FHIR doesn't do (that other standards have done, and failed) is:
  - Design, more design, a bit more design, add things that seem useful, build code one day maybe....

## The FHIR Process

- What counts is *real implementaion* feedback, which is why we are here today
  - This is enshrined in the FHIR philosophy and methodology
  - We do what implementations actually do, not what we think they may do or should do (even if we think we can do it better :-)
  - All we do is nothing if it isn't used in running software

## Aims of this Track - Primary track aims

- **Primary aim summarised: test what we have built (in the standard) using code and/or real-world data, and report back (to the Workgroup)**
- **This event is about "proof"**
- **In practice we (as individuals/teams), "know" that this stuff works, because some of us have been testing it out for quite a while. We are not necessarily starting from a blank slate today (though that is also ok). But until we bring it together we don't have "proof".**
- **We can log which parts of which resources we have used (coverage, spreadsheet)**

## **Aims of this Track - Secondary track aims**

- **Individuals to learn about this domain, theory, and by getting "hands on"**
- **Build software that is useful for those that build it**
  - **Maybe actually useful, but often as prototypes, for learning**
  - **Maybe useful for others too (but that is not essential)**
  - **But this is not about the software we make today, its about the data**
- **Take time away from the "day job" to focus on FHIR, for a change**
- **Network, enjoy, drink stuff, eat pizza\***

**(\* not this time, sorry)**

## Aims of this Track - Other aims

- We have a "track"
  - Shown on the track confluence page
    - <https://confluence.hl7.org/display/FHIR/2021-01+Vulcan++Medication+Definition>
  - A scenario for creating and using the resources
  - This is just a suggestion. It is not the primary aim in itself (which is to prove that your data can be represented in these resources)
  - If you have data about medication products, try to convert it to FHIR and tell us what works and what doesn't
  - You can use code, or you can use "paper" (e.g. Excel, XML/JSON, cut and paste etc.). It's not all about working software, but about data into FHIR

## The suggested track

- Is in detail on Confluence. But in essence (with all steps being optional):
  - Get (browse or make) a MedicinalProductDefinition resource
    - Put it on the server
  - Add a pack to it PackagedProductDefinition (connect to the product)
  - Add a ManufacturedItemDefinition (connect to the pack)
  - Add Ingredient(s) to the manufactured item, or directly to the product
  - Add SubstanceDefinition to the Ingredient
  - Add RegulatedAuthorization, ClinicalUseIssue, DeviceDefinition etc

## Aims of this Track - So what does that mean?

- **It's a working session**
- **People work, alone, or by teaming up, to take data and turn it into FHIR**
- **Validate it, then share that data, load it to the provided server (ideally)**
- **Log what data items and resources you used - what worked, what didn't, find gaps, bugs etc. These become change requests (Jiras)**
- **Write code to do this by all means, but doing it "by hand" is fine (it's about the data, the code is just a means to and end at this event)**
  - **Use tools:**  
**XML/JSON editors, Postman or other REST tools (or the built-in pages of the provided server can do basic REST)**

## Links and resources

- The main page is here:
- <https://confluence.hl7.org/display/FHIR/2021-01+Vulcan+--+Medication+Definition>
- So this won't repeat that
- But you can chat and ask questions here (on chat.fhir.org, aka "chat" aka "zulip":
- [#Vulcan/MedicationDefinition>Connectathon 2021-01](#)
- A FHIR server for this track is accessible at:
- <https://fhir-connectathon-server-ema.developer.azure-api.net>



## The version of FHIR

- These resources existed in FHIR R4, but have different names. Conceptually similar however, so any feedback on data in that format is still useful.
- However the main set now are in the FHIR R5 "Build" (current build)
- <http://build.fhir.org/>
- The EMA server provided is based on the May 2020 cut of that build ("Preview 2")
- <http://hl7.org/fhir/2020May/>
- The differences to the current build (Jan 2021) are minimal. E.g. MedicinalProductDefinition.ProductClassification was renamed to just ".Classification". But prefer the May flavour if you want to load to the EMA server.
- There is no specific Connectathon build this time, and the planned R4B release (which is FHIR R4 + an update to these specific resources is not yet ready). It would be mostly be the same as R5 Build as of now anyway.

# Medication Definition "viewer"

We hope to have this running, build for today. One viewer, using FHIR, should be able to show any medication product data from any system!

Bundle id: 25a4f5b7-f1fa-45bf-8bf2-6d822a53beb7
Product Identifier: Aldactide25 ( <a href="http://example.mhra.org.uk/fhir/MPID">http://example.mhra.org.uk/fhir/MPID</a> ) Name: Aldactide 25 mg/25 mg film-coated tablets
Package Identifier: {PCID} ( <a href="http://example.mhra.org.uk/fhir/pcid">http://example.mhra.org.uk/fhir/pcid</a> ) Description: Aldactide 25 mg/25 mg tablets may be packaged in the following containers: Amber glass bottles
Package
Administrable version of product Administrable Dose Form: Film-CoatedTablet ( <a href="http://example.mhra.org.uk/fhir/administrabledoseform">http://example.mhra.org.uk/fhir/administrabledoseform</a> ) Route of Administration: Oral 26643006 ( <a href="http://example.mhra.org.uk/fhir/SCT">http://example.mhra.org.uk/fhir/SCT</a> )
Ingredient Role: Active ( <a href="http://example.mhra.org.uk/fhir/ingredientRole">http://example.mhra.org.uk/fhir/ingredientRole</a> ) Substance: Hydroflumethiazide 395946004 ( <a href="http://example.mhra.org.uk/fhir/SCT">http://example.mhra.org.uk/fhir/SCT</a> ) Strength: Presentation Strength: 25 mg per 1 {tablet}
Ingredient Role: Active ( <a href="http://example.mhra.org.uk/fhir/ingredientRole">http://example.mhra.org.uk/fhir/ingredientRole</a> ) Substance: Spironolactone 387078006 ( <a href="http://example.mhra.org.uk/fhir/SCT">http://example.mhra.org.uk/fhir/SCT</a> ) Strength: Presentation Strength: 25 mg per 1 {tablet}
Ingredient Role: Excipient ( <a href="http://example.mhra.org.uk/fhir/ingredientRole">http://example.mhra.org.uk/fhir/ingredientRole</a> ) Substance: Calcium sulfate dihydrate 0 ( <a href="http://example.mhra.org.uk/fhir/SCT">http://example.mhra.org.uk/fhir/SCT</a> )

Bundle id: 25a4f5b7-f1fa-45bf-8bf2-6d822a53beb7
Product Identifier: {mpid} ( <a href="http://ema.europa.eu/fhir/MPID">http://ema.europa.eu/fhir/MPID</a> ) Name: Equilidem 2.5 mg film-coated tablets Manufacturer: Equilidem2-5mg-manufacturer ( <a href="http://ema.europa.eu/OMS">http://ema.europa.eu/OMS</a> )
Package Identifier: {PCID} ( <a href="http://ema.europa.eu/fhir/pcid">http://ema.europa.eu/fhir/pcid</a> ) Description: ALU-PVC/PVDC BLISTERS. CARTONS OF 10 FILM-COATED TABLETS.
Package Type: Carton ( <a href="http://ema.europa.eu/fhir/packageitemcontainertype">http://ema.europa.eu/fhir/packageitemcontainertype</a> ) Quantity: 1
Package Type: Blister ( <a href="http://ema.europa.eu/fhir/packageitemcontainertype">http://ema.europa.eu/fhir/packageitemcontainertype</a> ) Quantity: 1 Amount: 10 (items within)
Manufactured Item: Dose Form: Film-coatedtablet ( <a href="http://ema.europa.eu/fhir/manufactureddd">http://ema.europa.eu/fhir/manufactureddd</a> ) Unit of presentation: Tablet ( <a href="http://ema.europa.eu/fhir/unitofpresentation">http://ema.europa.eu/fhir/unitofpresentation</a> )

## The Server

# ➤ Demo from Andrei!

# Questions? Then hellos

