



2012 Survey Results and Development Roadmap

Australian Medicines Terminology

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Final

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1 Executive Summary

This document provides details and results of a survey conducted by the National Clinical Terminology and Information Service (NCTIS) from December 22, 2011 until January 24, 2012. The survey, directed at Australian Medicines Terminology (AMT) stakeholders, aimed to gain an understanding of what additional information should be included with the AMT and, if available, the approximate timeframes for deployment by implementers. The results of the survey have been used to aid in the creation of an AMT development roadmap and will also provide further guidance to the NCTIS for future developments.

The results identified two specific use cases, namely, dose based prescribing and clinical software user interface descriptions. These use cases consist of a number of subcomponents. The NCTIS, with input from AMT stakeholders, will now develop detailed requirements for these use cases and components. Following the validation of these by the AMT Governance process, a work plan and schedule will be published to AMT stakeholders for the next twelve months. Other items identified in the results will be addressed over time and prioritised for inclusion in the next time period (2013) of the AMT Roadmap.

1.1 Acknowledgements

The NCTIS would like to thank those stakeholders who took the time to complete the survey and for their valuable contribution to shaping the future of AMT.

2 Survey Details

2.1 Purpose

In September 2011 the NCTIS released the *AMT Implementation Plan*¹ which sets out a list of key deliverables that are anticipated to increase the adoption of AMT. One of the key deliverables is a product roadmap that will detail the areas of development of the AMT over the next 12 months. The development of this roadmap was greatly facilitated by the input and advice that was sought from AMT stakeholders.

The AMT is the national terminology to identify medicines used in Australia, using unique codes to deliver unambiguous, accurate and standardised names for both branded (trade) and generic (medicinal) products. The AMT has been developed under principles of terminology which state that an attribute of a concept must always be true. For medicines, there are attributes that may not always be true for all instances, e.g. GTINs, market availability, colours, etc. As a result, although the AMT provides unique codes to support interoperability, it may not provide all the necessary information required to support the implementation of an electronic medication management system.

The survey's aim was to gain an understanding of the importance of certain information that has over time been suggested for inclusion in a national medicines terminology. It was estimated that the survey would take 10–15 minutes to complete.

2.2 Recipients

An email notification of the survey was sent to the following groups:

- AMT licence holders (Australian National Terminology Release Licence Agreement)
- Medical Software Industry Association (MSIA)
- Australian Information Industry Association (AIIA)
- Aged Care IT Vendors Association (ACIVA)
- Clinical Terminology and Information Reference Group (NEHTA Reference Group)
- AMT Support Group (part of AMT Governance Framework)
- Medications Management Reference Group (NEHTA Reference Group)

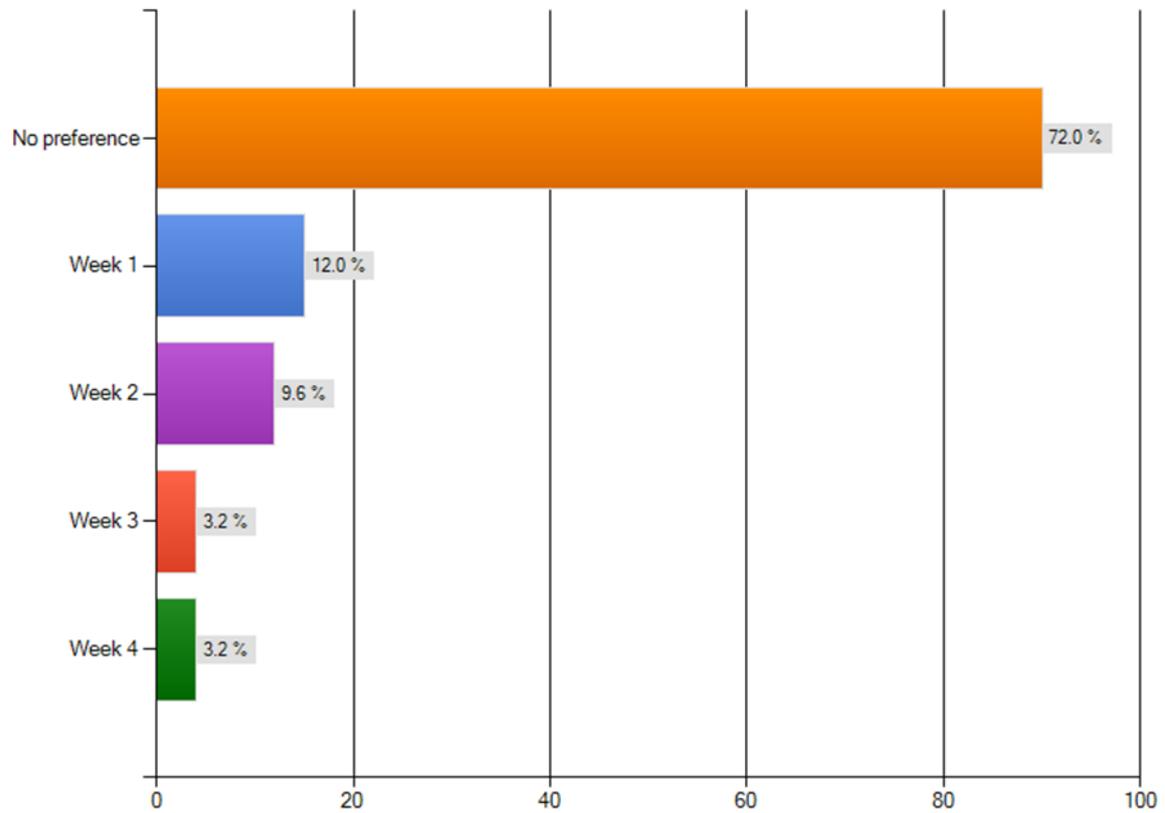
In addition, a notice was also placed on the NEHTA website (www.nehta.gov.au) informing readers of the survey.

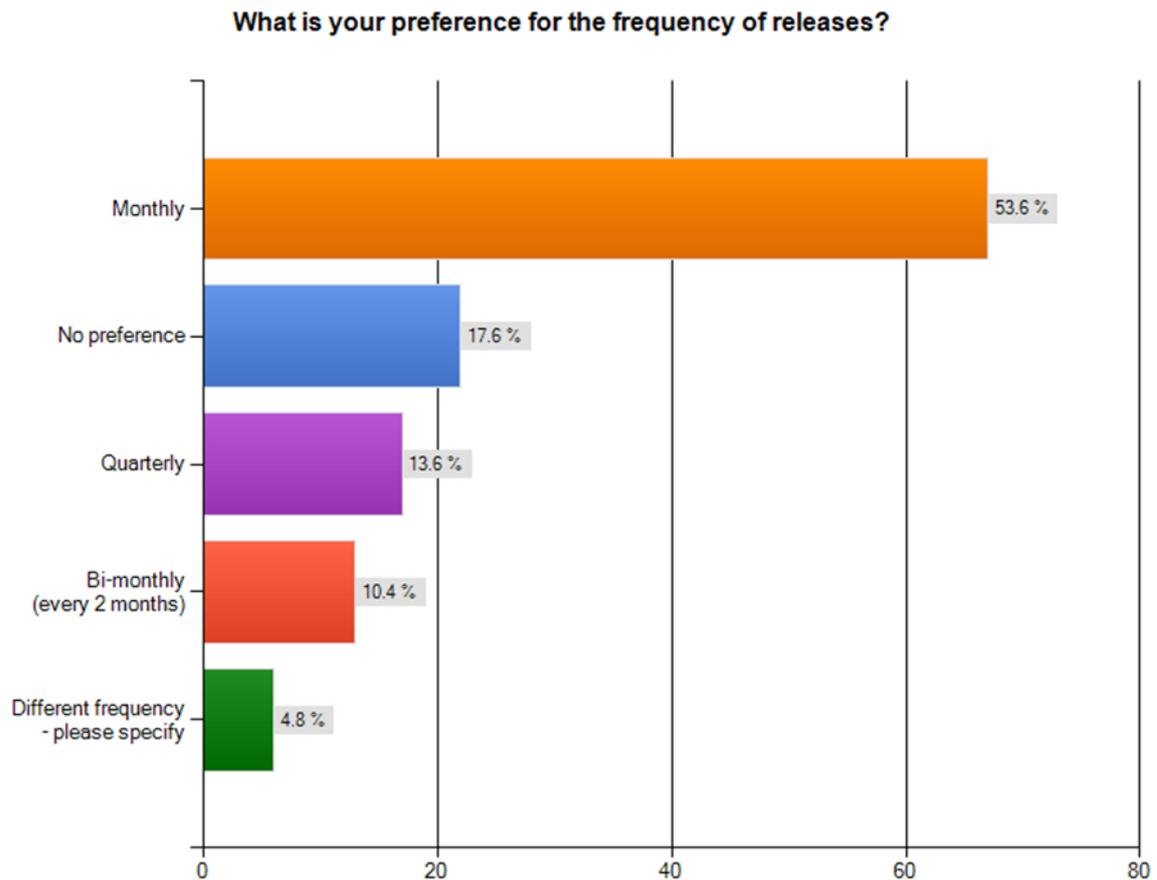
¹ Available at: http://www.nehta.gov.au/component/docman/doc_download/1375-nctis-amt-implementation-plan-v10.

2.3 Questions and Results

2.3.1 Delivery and Frequency

What is your preference for the delivery of the AMT within a given month?



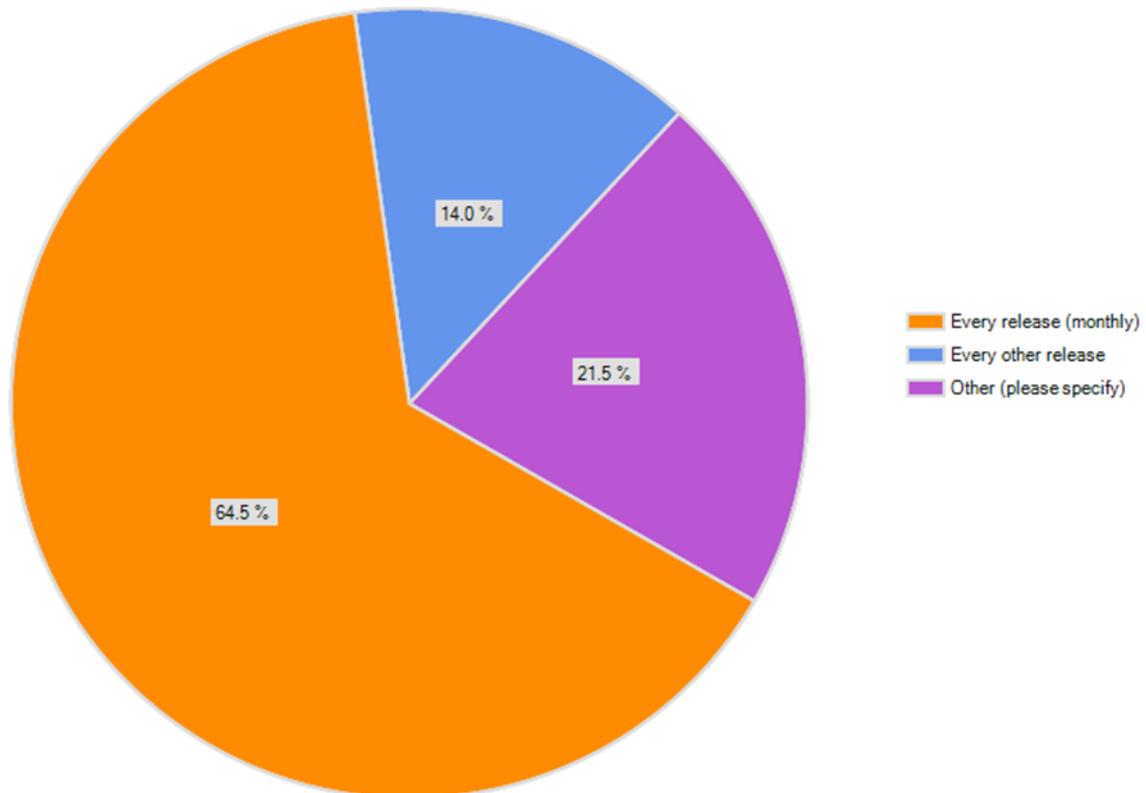


2.3.1.1 Responses to "Different frequency – please specify"

- To link in with clinical system releases in a timely fashion.
- Depends on the impact: if critical or minor, critical needs to be immediate.
- Monthly is fine for now but we should ensure that urgent and emergency releases are possible. In the end I would like to see daily or "as soon as changes are needed" releases!
- This aligns with MIMS and PBS data releases.
- Every six months.

2.3.2 Updates

What is the anticipated frequency for updating the AMT within your system?



2.3.2.1 Responses to "Other Please Specify"

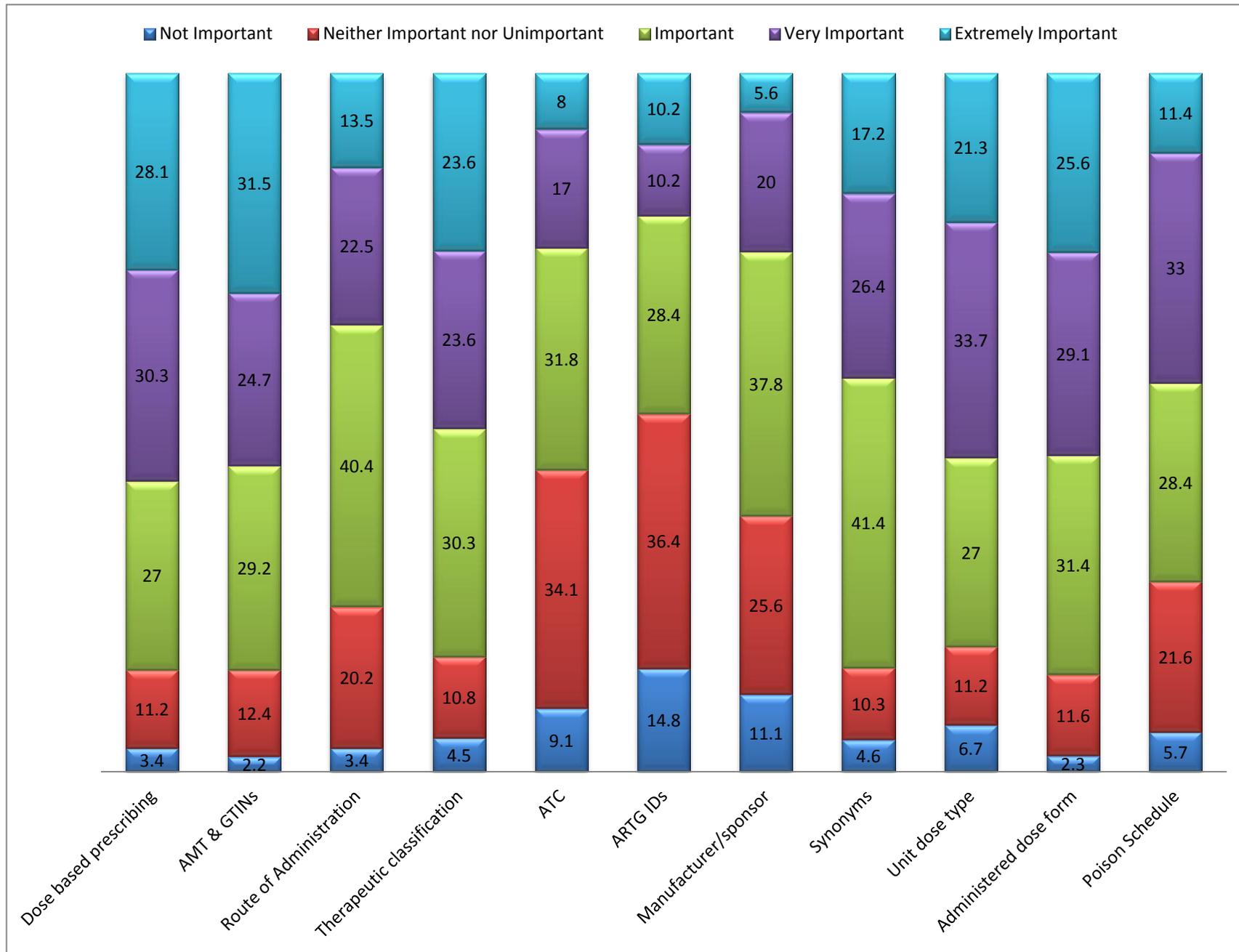
- To be determined on requirements.
- I belong to a nursing professional organisation and do not have the platforms for updating the AMT system.
- Quarterly (3 responses)
- Annually
- No role in this. (Similarly: "Not currently used." "Not yet specified." "Don't know." "Unsure.")
- AMT needs to be linked to "jurisdictional" list of approved medicines and work out a strategy for items that are not available in Australia that are used in that jurisdiction.
- Depends on the updates.
- Use only for reference.
- As decided.
- Depends on if we can automate it.
- Depends on scope of updates.
- We are not currently using AMT data within our system however once this is in place I expect the updates would take place within a couple of days.
- Unsure as will have to look at possible impacts.
- As frequently as AMT is released, comply with license and standard.
- At customer request/need – this could be with every release.

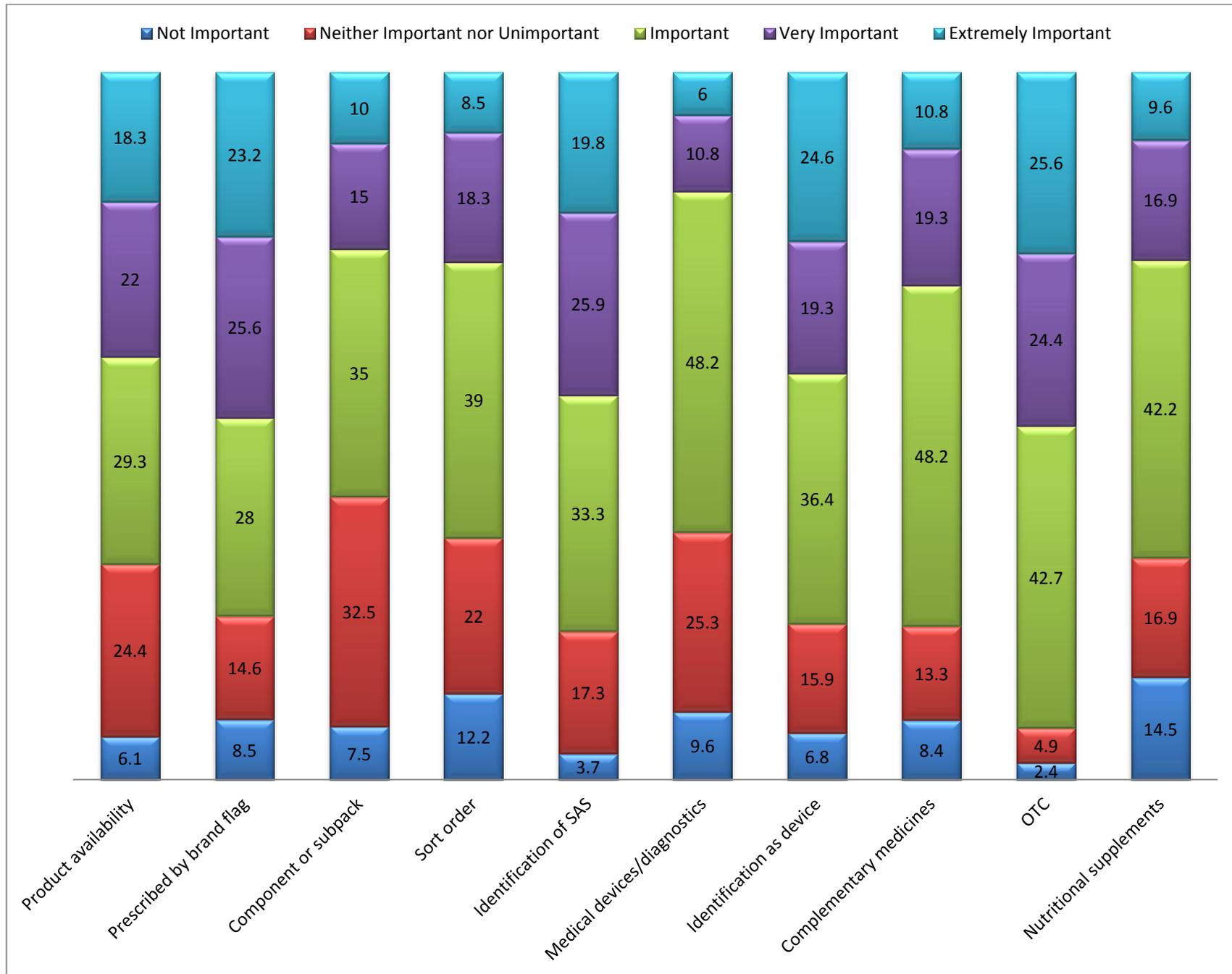
- As often as possible, depending on other priorities.
- AMT will not be part of our system.

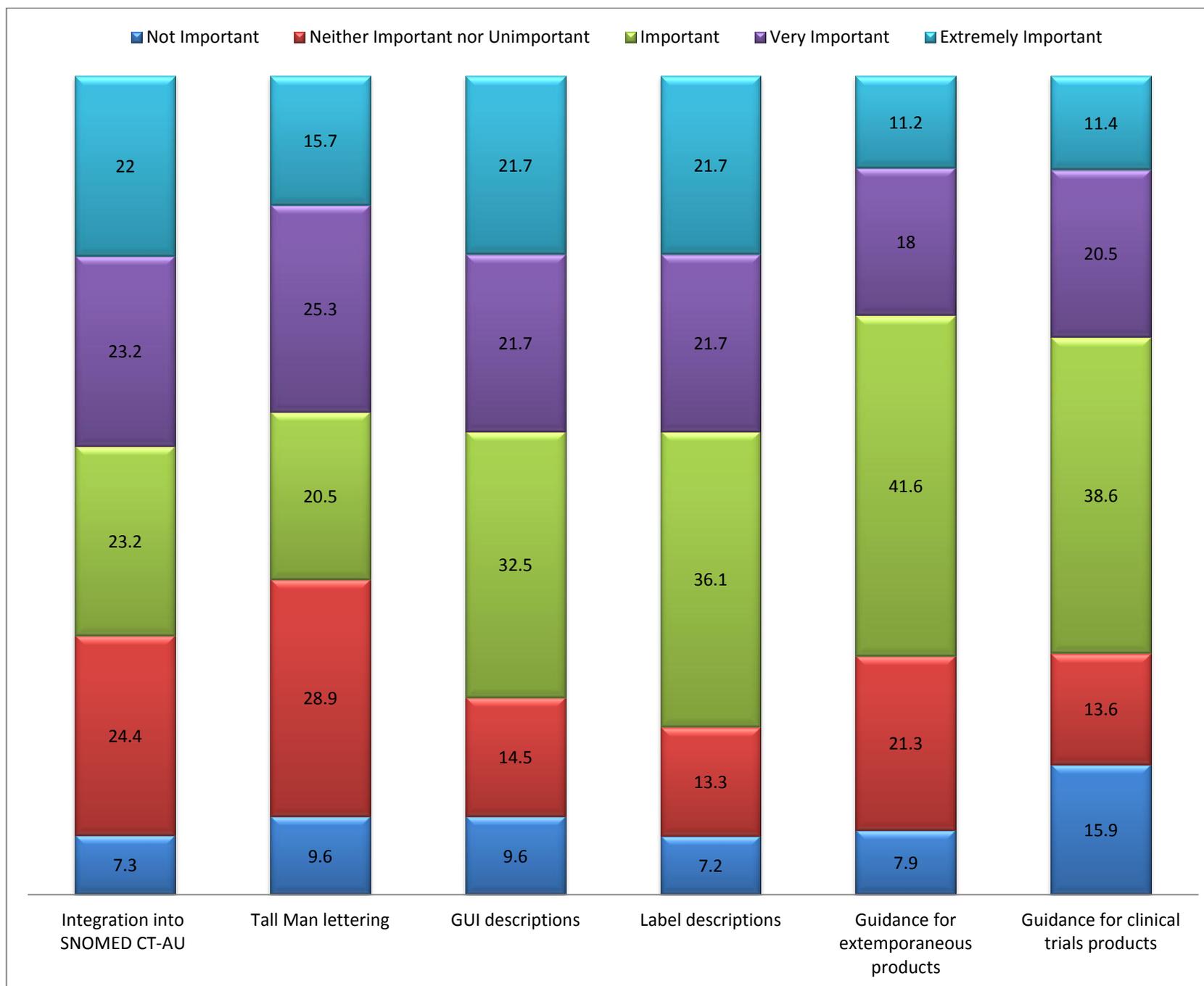
2.3.3 Features and Attributes

Note: See the Glossary (p.24) for explanations of acronyms and some technical terms.

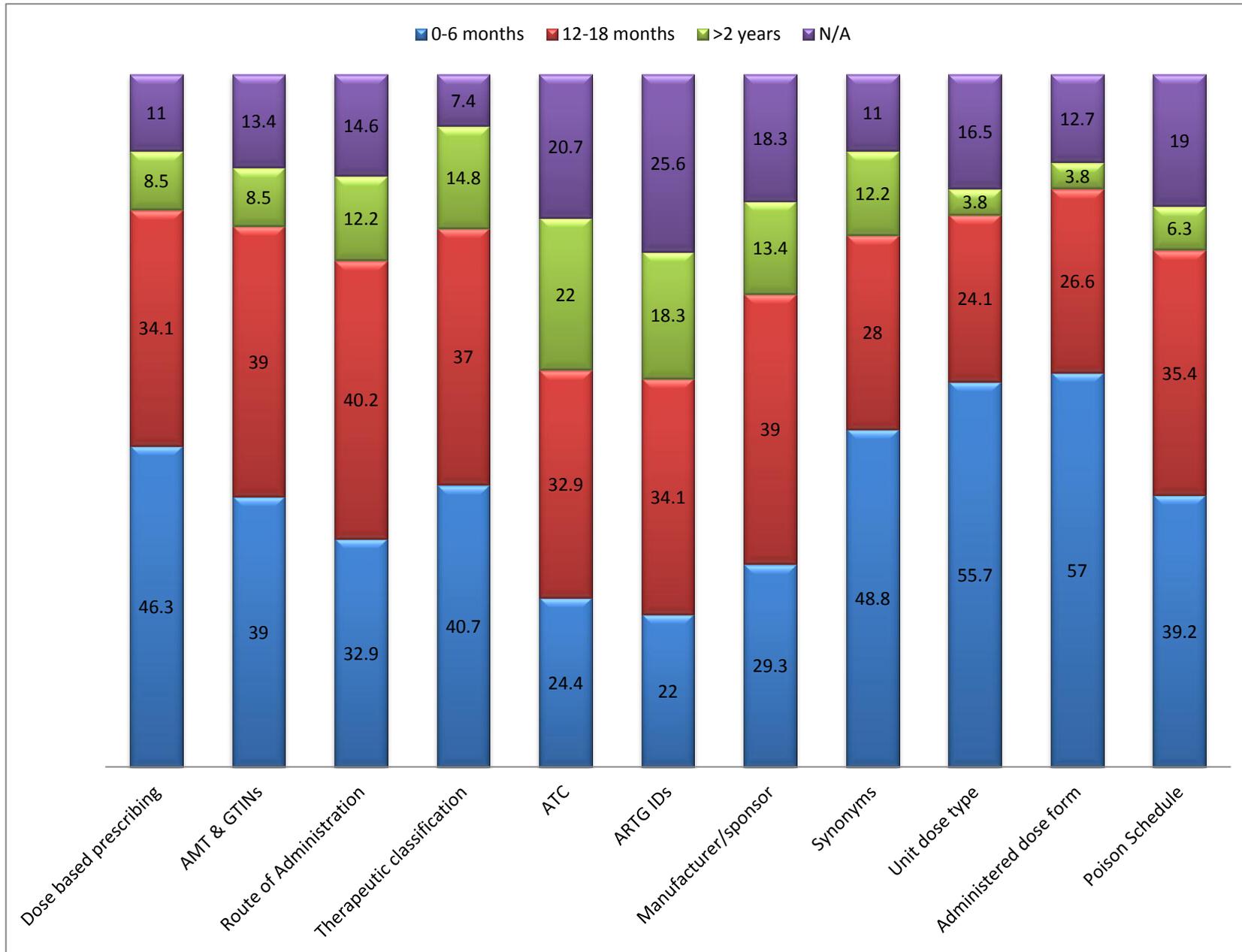
- Attributes and/or concept class that allows dose-based prescribing (ingredient, dose, route, frequency).
- A link between AMT trade products and GTINs.
- Trade product route(s) of administration as registered with the TGA.
- Grouping of AMT concepts into therapeutic classes.
- Link between AMT concepts and ATC classification.
- ARTG IDs or Licence IDs.
- Product manufacturer/supplier.
- Synonyms, other descriptions.
- Identification of unit dose type – discrete (e.g. tablet) or continuous (e.g. cream).
- Administered dose form (e.g. “syrup” versus “powder for reconstitution” which is a manufactured dose form).
- Identification of the product's poisons schedule.
- Product availability status.
- Identification of concepts that should only be “prescribed” by brand (e.g. Warfarin).
- Indication that an item within a component or sub-pack is usable and/or orderable.
- Sort order indicating ascending order of strength and pack size.
- Identification of SAS medicines.
- Inclusion of medical devices and diagnostic agents.
- Indication if AMT product is a device.
- Inclusion of complementary medicines, e.g. herbal preparations.
- Inclusion of OTC medicines.
- Inclusion of nutritional supplements.
- Integration of AMT into SNOMED CT-AU.
- Descriptions displaying Tall Man lettering.
- Descriptions that could be utilised in a clinical GUI (limited number of characters).
- Descriptions that could be utilised on a label (limited number of characters).
- Guidance for implementation of extemporaneous products.
- Guidance for implementation of clinical trial medicines.

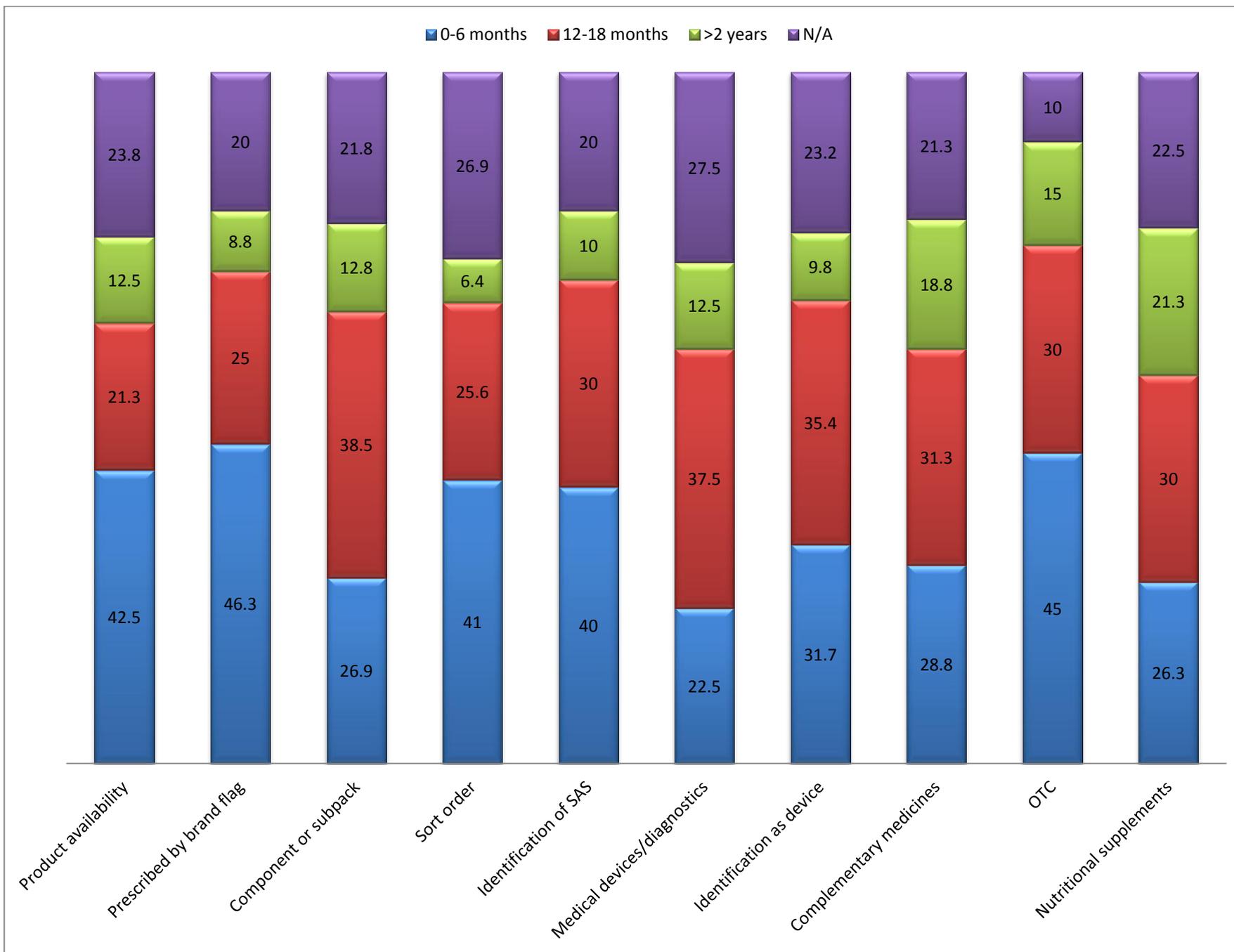


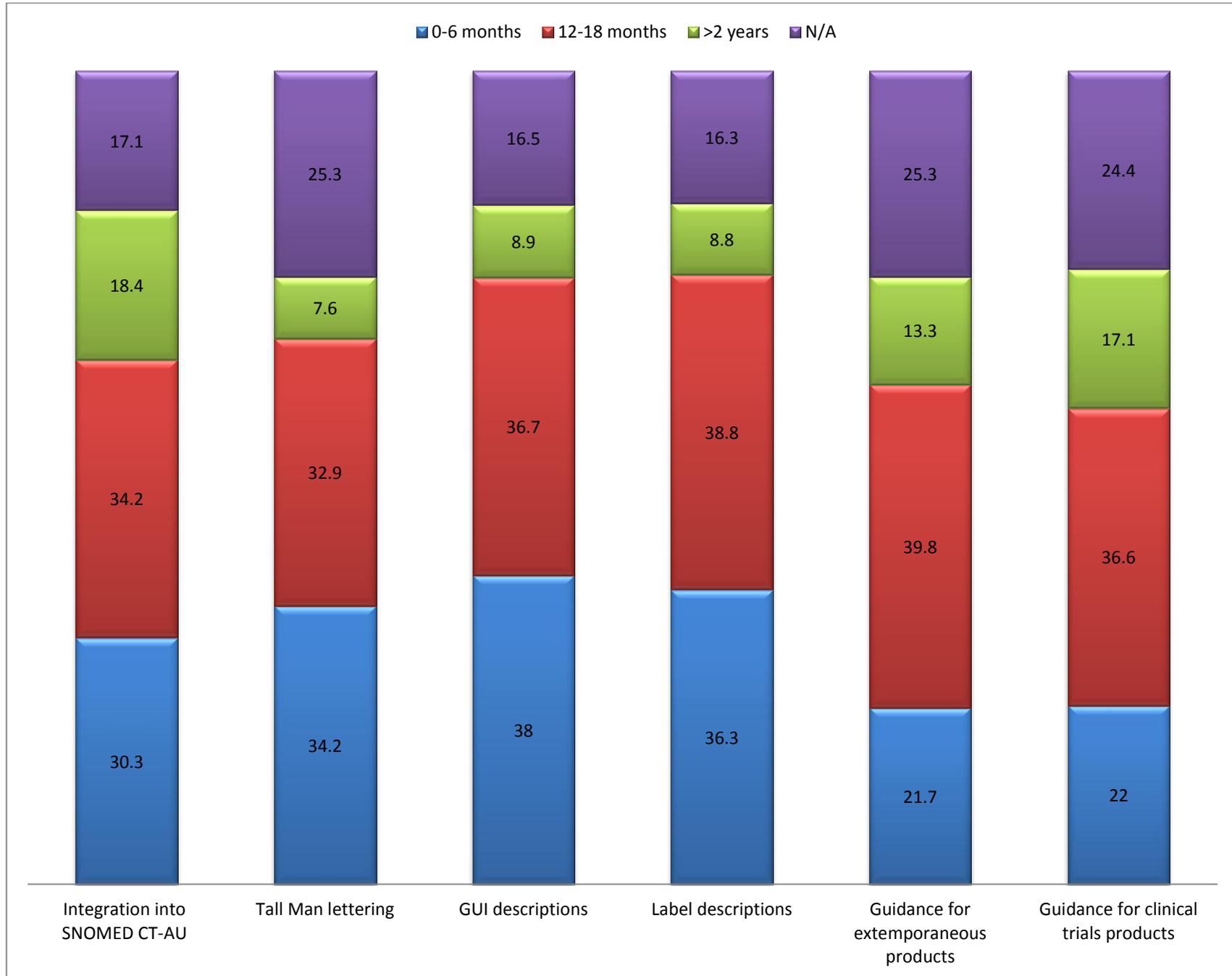




2.3.4 Timeframes







2.3.5 Additional Features/Attributes

The following requests were received:

- TPNs – when ordering TPNs within a hospital setting, from Prescriber to Dispensing System to external Supplier e.g. Baxter. Need to cater for non-standard modified preparations. Time period 12- 18 months.
- Chemotherapy products. For ordering from Prescriber to Dispensing System to Supplier. Time period 12-18 months.
- Nutritional Feeds e.g. Ensure. When creating a Discharge Medication List to be sent electronically, a full list of items that the patient is taking should be included, especially nutritional, herbal or complementary medicines. Time period 12-18 months.
- Associated PBS codes should also be made available to help with mapping. For immediate use.
- Linkage to CMIIs. Time period 12-18 months.
- To create more useful clinical synonyms e.g. removing unnecessary salt forms and hydration status, and keep names simple for easy display in a clinical system: ASAP (0-6 months).
- To separate the MP where clinically necessary such as modified release, depot formulations, topical/rectal/ophthalmic preparations: ASAP (0-6 months).
- Removing "1 tablet" descriptors from the MPP, TPP: ASAP (0-6 months).
- GMDN Description of medical devices.
- Whilst it is accepted this is mainly for Australia, the criteria used should not be so "exclusive" that they are inappropriate or require a lot of Workarounds for New Zealand.
- PBS, MIMS dependent on third parties. More hospital products.
- Separation of the same product with different dosage or therapeutic forms e.g. aciclovir systemic versus ophthalmic versus topical: extremely important; expected use time period of 0 to 6 months.
- Short synonyms need to be clinically appropriate to the prescriber/administer, could use now.
- Standardisation of generic medicines branding – e.g. eliminate all but the original brand and refer to them by generic name only – our elderly are confused enough as it is without changing brands every second month.
- Need to be able to map or integrate with clinical electronic systems so that it can be used and integrated into the Health practice in the future.
- Therapeutic drug class is very important.
- Barcodes. Pharmacists are legally required to scan-check dispensed medications with a scanner after dispensing.
- AMT should be linking with EAN (barcode) numbers and wholesaler codes.
- Management of items that while discontinued on the Australian market, are still in use in some institutions (may be attribute of SAS).
- Ability to reconcile medication lists in clinical software with that in the PCEHR and Discharge summaries and Specialist Letters.
- Guidance on how to display AMT information on screen and how to safely link existing data to multiple sources of decision support.
- Necessary and sufficient definitions – Extremely important – Immediate use.
- Concrete domains – Extremely important – Immediate use.
- General concept inclusion axioms – Important – use in 6 to 12 months.

- Would be happy to receive weekly releases, updates if these were snapshots and easy to implement.
- Would be happy to receive patches (or fixes) daily if there were recalls on any drug/device/ product batch).

2.3.6 Additional Comments

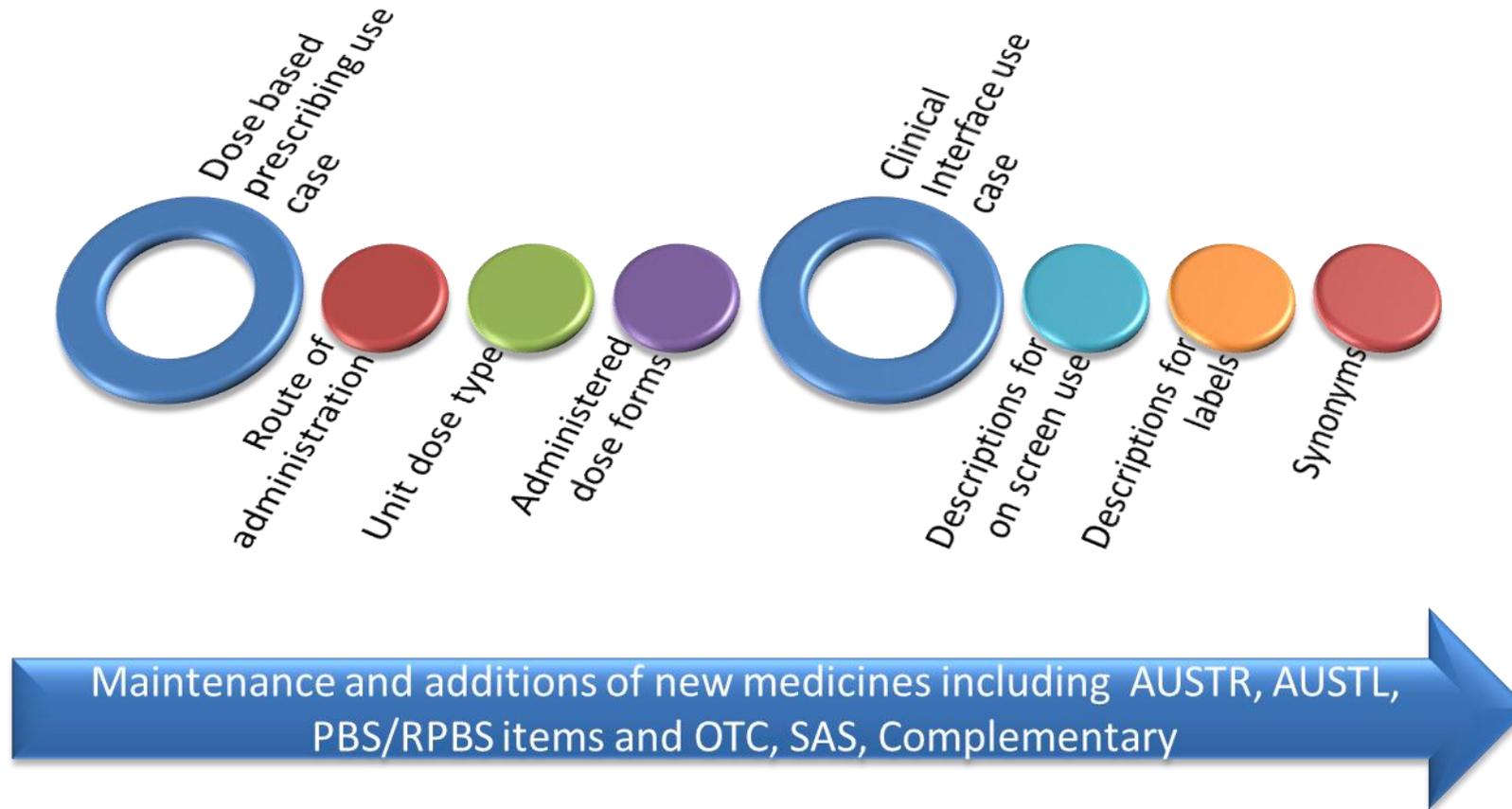
The following additional comments were received:

- Our immediate and long-term goals are to utilise the AMT within a dose-based, secondary care prescribing model. To this end the following items are our highest priority:
 - Coded route information
 - Coded administered dose form
 - Ontology administered form-route combinations
 - Poisons Schedule information
 - Discrete versus continuous unit dose type
 - Concepts that should only be prescribed by brand.
- AMT implementations and guidelines should include focus on contingencies with regards to procedures for handling new products before they are included in release of AMT as it is likely that applications will not be able to implement new releases in a timely manner following releases.
- Incorporate Australian Commission on Safety and Quality in HealthCare recommendations (e.g. Tall Man Lettering).
- I'm not sure if Tall man lettering has a proven evidence base for its use. However, if this is to be an Australian standard, then I would vote for the AMT terminology to reflect the implementation within the term fields.
- Synonyms should be clinically appropriate and avoid inclusion of unnecessary salts.
- More relevant (clinical) synonyms should be provided rather than truncated chemical/salt synonyms e.g. primary synonyms for Fleet, Hamilton Sunscreen.
- Primary synonyms for products with multiple different dosage forms (modified release, immediate release tabs, granules etc.) should be separated to ensure clarity for the end-user (doctors, nurses).
- AMT naming is quite often inconsistent. This is difficult for health services that want to take a consistent approach to naming our gap items.
- The AMT updates should align with other standard medicine update files such as PBS.
- I think that getting consensus on a national drug classification system would be very useful to a wide range of stakeholders.
- From a clinical system implementation perspective, there is no advantage to the inclusion of the AMT into SNOMED CT-AU. I see the driver being to support a hierarchy or a therapeutic classification but other than this see no case for the complication of description identifiers. The NHS dm+d has been proven in ETP and even though this was later developed to be included within SNOMED CT, none of this work was required for implementation of the dm+d into the prescribing process.
- The role of a terminology should be entirely separate from the provision of clinical advice, availability and subsidy status etc. It should include only those attributes (strength and dose form etc.) that are intrinsic to the drugs and devices themselves. There should be a competitive market for decision support etc. based on a common terminology.

- The highest priority is to get it working in MIMS and between MIMS and other databases. We would only use AMT as native (i.e. packaged with MIMS) for very finite use even when all issues addressed if customers were unwilling to pay the MIMS licensing or if it was a requirement for a clinical trial.

3 Development Roadmap

3.1 New Development



An evaluation of the responses of the survey identified two use cases that will be the priority for development over the next 12 months. These are:

- Dose-based prescribing.
- Descriptions for use in a clinical application interface.

Additional attributes and features needed within the AMT to support these use cases are identified in the diagram above.

3.1.1 Next Steps

The NCTIS will undertake detailed requirements gathering for each of these use cases with assistance from AMT stakeholders. These requirements will be validated by the AMT Governance Framework², including the AMT Support Group prior to beginning development. Once requirements and specifications have been produced these items will be added to the NCTIS work plan and scheduled release dates will be published. Other items identified in the results will be addressed over time and prioritised for inclusion in the next time period (2013) of the AMT Roadmap.

3.1.1.1 Dose- Based Prescribing

Prescribing within an acute care setting is routinely performed on a dose-based practice rather than pack-based, as in primary care. Additional information will be required within AMT to support this. Some of these additional items may include:

- The TGA registered route of administration of the medicine.
- The type of unit dose of the medicine, for example continuous, such as a cream or discrete, such as a tablet.
- The administered form of the medicine. Medicines may be manufactured as a powder but administered as a syrup.

3.1.1.2 Clinical Interface

To ensure that both clinicians and computer systems can understand the AMT within a clinical application the AMT descriptions need to:

- Be visible and not truncated on the screen.
- Be clinically relevant and understandable which may include more than one description for an item, such as terms that are synonymous.
- Be relevant and consistent for use on labelling of medicines.

3.1.2 Other items

3.1.2.1 ATC

While the inclusion of ATC codes was not ranked as high as other priority items the NCTIS has already developed a map of AMT to ATC codes but has not released this data. Currently there are a number of proprietary therapeutic classifications in the healthcare sector but there are no Standards or standard definitions for these. Therefore inclusion of therapeutic classifications within the AMT will take some time to gather information to develop or to source a standard set.

As an interim solution the NCTIS will develop high-level requirements for an AMT/ATC map which will result in the release of a reference set containing the AMT to ATC codes map before the end of the year.

² To be published on the NEHTA website (<http://www.nehta.gov.au/>) shortly.

3.2 Future work

Other priority items identified in the survey included the linking of GTINs and product availability.

3.2.1 Product availability

AMT is a terminology and therefore all products/concepts will persist in the data whether or not they are available in the market. Market availability however is key to the creation of an end user pick list in a clinical prescribing application.

As time progresses the NCTIS would like to see AMT used natively in applications rather than mapping between medicine databases (see *AMT Implementation Plan*³) and therefore understand that a reference set of product availability would be most useful to implementers. The NCTIS will be investigating ways that this information may be made available in the future.

3.2.2 GTIN

The National Product Catalogue (NPC) is a central repository of product and pricing data. It also provides all products with a unique identifier (GTIN), a globally recognised standard, hosted on the GS1 platform (GS1net)⁴. Its purpose is to enable efficiency gains and cost savings through an interconnected supply chain.

The AMT is a clinical terminology that is developed to uniquely identify a product for use in an electronic clinical medication management workflow. The way the product is described and the attributes it contains relate to the product in a clinical sense.

While both sets of data (NPC and AMT) may describe the same product, the use case for each set of data is different. It may be that these same products can be linked by producing a map between the two data sets. However, this use case would need to be appropriately evaluated to ensure that:

- the purpose of the map was clearly stated and that the map would only be used for that purpose;
- the appropriate quality controls and assurance were performed to satisfy the use case on both sets of data;
- the appropriate skills and knowledge were used for the creation of the map; and
- clinical safety risks would not be increased or impacted by using data not designed for use in a clinical medication management system.

NEHTA's Supply Chain programme will be continuing to monitor the uptake of the NPC across all sectors of the healthcare community to gauge the demand for a link between the NPC and AMT data.

³ http://www.nehta.gov.au/component/docman/doc_download/1375-nctis-amt-implementation-plan-v10

⁴ <http://www.gs1.org/>. GS1net is run by GS1 Australia.

Appendix A Glossary

AMT	Australian Medicines Terminology ⁵
ARTG	Australian Register of Therapeutic Goods ⁶
ATC	Anatomical Therapeutic Chemical Classification System ⁷
GMDN	Global Medical Device Nomenclature ⁸
GTIN	Global Trade Item Number ⁹
GUI	Graphical User Interface – allows users to interact with electronic devices with images rather than text commands ¹⁰ .
NCTIS	National Clinical Terminology and Information Service ¹¹
NEHTA	National e-Health Transition Authority
NPC	National Product Catalogue ¹²
OTC	Over the counter
SAS	Special Access Scheme ¹³
SNOMED CT-AU	Systematized Nomenclature of Medicine, Clinical Terms, Australian Extension ¹⁴
Tall Man Lettering	Tall Man lettering uses a combination of lower and upper case letters to highlight the differences between look-alike drug names ¹⁵ .
TGA	Therapeutic Goods Administration ¹⁶

⁵ <http://www.nehta.gov.au/connecting-australia/terminology-and-information/clinical-terminology/australian-medicines-terminology>

⁶ <http://www.tga.gov.au/about/tga.htm>

⁷ <http://www.who.int/classifications/atcddd/en/>

⁸ <http://www.gmdnagency.com/>

⁹ <http://www.gs1.org/barcodes/technical/idkeys/gtin>

¹⁰ http://en.wikipedia.org/wiki/Graphical_user_interface

¹¹ <http://www.nehta.gov.au/connecting-australia/terminology-and-information/clinical-terminology>

¹² <http://www.nehtasupplychain.com.au/>

¹³ <http://www.tga.gov.au/hp/access-sas.htm>

¹⁴ <http://www.nehta.gov.au/connecting-australia/terminology-and-information/clinical-terminology/snomed-ct-au>

¹⁵ http://www.safetyandquality.gov.au/internet/safety/publishing.nsf/Content/PriorityProgram-06_NTMS

¹⁶ <http://www.tga.gov.au/>