



Aotearoa New Zealand Tall Man lettering list:

Review report

April 2020

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Background

Tall Man lettering is an error-prevention strategy used as part of a multifaceted approach to reduce the risk of look-alike and sound-alike medicine name confusion and errors. Tall Man is a typographic technique that uses selective capitalisation to help make similar-looking medicine names easier to differentiate, and to help selection and supply of the right medicine. For example, fluOXETine and fluVOXAMine.

Aotearoa New Zealand uses the mid Tall Man lettering format (because this is considered to be the most effective and easily applied variant). Tall Man lettering can be used for:

- electronic drop-down medicine lists
- automated dispensing cabinet screens
- SMART pumps^a
- computer-generated pharmacy labels
- medicine shelf labels
- pre-printed order sheets.

The Health Quality & Safety Commission (the Commission) supports a Tall Man lettering list, first published in December 2013.[2] This is a limited list so as to retain the error-reduction effect of Tall Man lettering and not overuse it.

This 2020 report reflects the first review of the list since December 2013.

The review process

The health sector was invited (21 October to 15 November 2019) to make submissions on potential candidates for the application of Tall Man lettering format. Direct submissions were supplemented with information from:

- the medication error reporting programme (MERP) past event reports^b
- the Institute for Safe Medication Practices (ISMP) Tall Man list [3]
- the Australian Commission on Safety and Quality in Health Care (ACSQHC) tall man list (updated November 2017).[4]

For this review, we followed the same methodology as for the derivation of the initial Tall Man lettering list, December 2013.[2]

The medicine name pairs submitted were cleaned for:

- duplication
- medicines already on the New Zealand Tall Man lettering list
- current availability of the medicine in New Zealand
- removal of those medicines where Tall Man lettering was unable to fix potential product confusion through look-alike or sound-alike names (Appendix 4).

^a A SMART pump is an electronic infusion device with imbedded computer software aimed at reducing drug dosing errors through the presence and use of a drug library. Tall Man lettering can be incorporated into the drug libraries on these pumps.

^b The MERP, which was run out of the New Zealand Pharmacovigilance Centre, Dunedin, closed in April 2018.

A risk rating process was applied to the candidate medicines (Appendix 1). An expert panel of doctors, pharmacists and nurses (Appendix 3) reviewed and agreed the risk assessments scores (Appendix 5) and the final Aotearoa New Zealand Tall Man lettering list (Appendix 6). Medicine pairs assigned an extreme or high risk had mid Tall Man lettering applied.

The risk assessment process had three components:

1. Similarity between the paired medicines
2. Severity rating
3. Risk rating.

Examples of severity risk assessments are in Appendix 2.

Some medicines were added to the Aotearoa New Zealand Tall Man lettering list without a formal risk assessment, including:

- medicines on the ACQSHC's *National tall man lettering list*, updated 2017[4]
- medicines on the ACSQHC's *Supplementary list of specialised medicines with suffix 'mab', 'nib' and 'gib'*. [1] This included monoclonal antibodies ('mabs') and tyrosine kinase inhibitors ('nibs') available in New Zealand
- under the existing Tall Man lettering 'cephalosporin rule' (eg, ceftaroline, ceftAROLine; cefaclor, cefaCLOR)
- recommended international nonproprietary naming (rINN) (eg, ciclosporin, cicloSPORIN)
- trimipramine (trimipramine), which was deleted from the list because no products are currently listed in the New Zealand Universal List of Medicines.

The panel considered 38 potential medicines name additions, one deletion and the non-risk assessed medicines (see above). Combined with the 2013 list, this provided 225 medicine names with Tall Man lettering format in the 2020 Aotearoa New Zealand Tall Man lettering list (Appendix 6).

We understand that the ACSQHC is also reviewing the blood factors (the 'cogs'; eg, eftrenonacog alfa). When available, these will be considered for inclusion in the New Zealand list.

For further background on the rationale for the Tall Man lettering format and methodology see the Commission's *Tall Man Lettering List: Report*, December 2013.[2]

References

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Appendix 1: The risk assessment process for medicine name pairs

The risk assessment process has three components:

1. Similarity between the paired medicines
2. Severity rating
3. Risk rating.

1. Similarity rating – similarity of appearance between the paired medicines

The similarity score is a composite score that considers similarity in the medicine names and similarity in strengths, routes of administration and dose similarity:

Composite similarity score = name similarity score (orthography)	70%
+ strength similarity score	20%
+ route similarity score	5%
+ dose similarity score	5%

The Commission's patient safety team completed this process, calculating each composite similarity score independently, with any differences being agreed by discussion.

As Tall Man lettering is primarily a tool designed to differentiate similar-looking names, a greater weight is placed on the degree of this similarity. The likelihood of confusion was arbitrarily given a total score of 100 (Figure 1).

We calculated name similarity using the BI-SIM calculator (normalised by length) found at <http://www.cs.toronto.edu/~aditya/strcmp2/>. The BI-SIM gives the greatest accuracy when predicting medicine name confusion.[5–7] The BI-SIM measure places emphasis of scoring on similarity found at the beginning of the medicine names. This is an important consideration given that the risk of confusing two names will be increased if those names appear in close proximity in a list, for example, on a computer screen. BI-SIM scores range from 0.00 to 1.00.

Strength similarity was given a higher weighting over route and/or dose form similarity because many medication events indicated that strength similarity was a cause in wrong medicine name errors. Strength is commonly associated with the medicine name on prescriptions and medicine packaging, and in computer systems, and was given a greater weighting than similarities in route and/or dose form. When calculating the dose form similarity score, immediate-release tablets and capsules were considered interchangeable.

Figure 1: Medicine name pairs similarity scoring

Feature	Scoring
Name similarity	BI-SIM score x 70
Strength similarity	
No common strength	0
Some (but not all) strengths common	10
All strengths common	20
Route similarity	
No common routes of administration	0
Some (but not all) routes common	2.5
All routes common	5
Dose form similarity	
No common dose forms	0
Some (but not all) dose forms common	2.5
All dose forms common	5
Total composite score	(Maximum) 100

2. Normality of the composite similarity scores

We applied the Kolmogorov-Smirnov test of normality to see if the composite similarity scores were normally distributed. Our name-pair score did not differ significantly from a normal distribution (Figure 2).

Figure 2: Kolmogrov-Smirnov test of normality

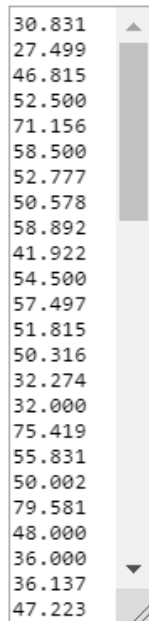
URL: www.socscistatistics.com/tests/kolmogorov/default.aspx

Interpreting the Result

The test statistic (D), which you'll see below, provides a measurement of the divergence of your sample distribution from the normal distribution. The higher the value of D, the less probable it is that your data is normally distributed. The p -value quantifies this probability, with a low probability indicating that your sample diverges from a normal distribution to an extent unlikely to arise merely by chance. Put simply, high D, low p , is evidence that your data *is not* normally distributed.

It's also worth taking a look at the figures provided for skewness and kurtosis. The nearer both these are to zero, the more likely it is that your distribution is normal.

Your Data



30.831
27.499
46.815
52.500
71.156
58.500
52.777
50.578
58.892
41.922
54.500
57.497
51.815
50.316
32.274
32.000
75.419
55.831
50.002
79.581
48.000
36.000
36.137
47.223

Distribution Summary

Count : 68
Mean: 49.34209
Median: 49.242
Standard Deviation: 12.473826
Skewness: 0.373949
Kurtosis: -0.229922

Result: The value of the K-S test statistic (D) is .06319.

The p -value is .93279. Your data does *not* differ significantly from that which is normally distributed.

As the data were normally distributed, they could be divided into five quintiles arbitrarily allocated a similarity rating denoting the likelihood of confusion (with 1 being the most similar and 5 being the least similar). This approach does not make statistical sense if the sample is not normally distributed.

The similarity rating is used, with the potential severity score, to obtain a risk assessment score (see later).

3. Severity rating – consequence of confusion between medicine pairs

An expert panel of doctors, pharmacists and nurses assigned the identified medicine pairs a severity rating (Figure 3). The severity process is considered to be a subjective measure, therefore the expert panel was chosen based on professional representation of the medicine use process, for example, prescribing, dispensing and administration as well as clinical and toxicological expertise.

When assigning severity ratings, the panel considered the properties of the two medicines and took into consideration:

- whether either of the medicines were known to be a 'high-alert' medicine (eg, insulin, anticoagulants, opioids, cytotoxic agents)
- the number of doses that would need to be administered to cause harm
- the indication(s) (eg, epilepsy versus vitamin supplementation)
- whether allergy to either medicine is common
- whether either medicine has a significant number of known significant drug interactions (eg, greater than five major interactions as per New Zealand Formulary (<https://nzf.org.nz>))
- whether either medicine has a narrow therapeutic index
- whether administration of the intended medicine is time critical.

To help the decision-making, the panel assumed that:

- an error was made, substituting one medicine for the other, and that the error reached the patient
- an error could have been made during prescribing, dispensing or administration processes (and still reached the patient)
- confusion between two medicines represents two possible errors (medicine A is intended and medicine B is given, or medicine B is intended and medicine A is given). Where one error is potentially more serious than the other, the 'severity' is based on the more serious error
- the patient is of average health
- there is only short-term exposure to the wrong medicine, ie, that the substitution error was detected within one week.

Figure 3: Severity rating table

Rating	Description
Severe	Confusion between the two medicines is likely to (or has been documented to) result in patient death or would require an intervention to sustain life
Major	Confusion between the two medicines is likely to (or has been documented to) cause significant injury such as loss of organ function or would require an intervention to prevent significant injury
Moderate	Confusion between the two medicines is likely to (or has been documented to) require hospitalisation or transfer to a higher level of care (eg, transfer to intensive care)
Minor	Confusion between the two medicines is likely to (or has been documented to) require increased observations or monitoring to ensure it does not have an adverse outcome
Minimum	Confusion between the two medicines is unlikely to cause any adverse outcome

Appendix 2 gives examples of the range of factors considered when assigning severity ratings to a medicine name pair. As all medicine name pairs were assessed by the same panel, inter-rater reliability testing was not required. Consensus was achieved through panel moderation.

4. Risk rating

For a medicine name pair, a risk rating was assigned using the similarity rating and severity rating scores combined in a risk matrix (Figure 4).

Figure 4: Risk matrix

		Severity rating (potential consequence)				
		Minimum	Minor	Moderate	Major	Severe
Similarity rating [‡] (likelihood of confusion between medicines)	1	Moderate	High	Extreme	Extreme	Extreme
	2	Moderate	High	High	Extreme	Extreme
	3	Low	Moderate	High	High	Extreme
	4	Low	Moderate	Moderate	High	High
	5	Low	Low	Low	Moderate	Moderate

‡ The similarity rating where 1 is the most similar and 5 is the least similar.

5. Application of Tall Man lettering format

Medicine name pairs that were risk assessed as being extreme or high risk had mid Tall Man lettering format applied. Those items of moderate risk with high likelihood of confusion would have been considered if there was a small number in the extreme and high-risk categories.

It is not known what the ideal number is to have in a list. The National Medication Safety Advisory group (formerly the medication safety advisory group) agreed an arbitrary figure of 150 medicine name pairs +/- 10%, based on the literature indicating 'less is more' and considering that most health professionals will not be exposed to this number, depending on their field of expertise.

Appendix 2: Examples of severity risk assessment

Taken from the Commission's *Tall Man Lettering List: Report 2013*.^[2]

Example 1	cephalexin and cefaclor	Minimum severity
Reasoning	<p>Neither is a high-alert medicine.</p> <p>Allergies are known, but allergy to one is likely to imply allergy to the other (class level).</p> <p>Both agents have similar spectrums of antimicrobial activity and are commonly used for the same indications.</p> <p>Neither omission nor commission (assuming treatment is provided with the alternate agent) is likely to cause an adverse outcome.</p>	
Example 2	Avandia® (rosiglitazone) and Avanza® (mirtazepine)	Minor severity
Reasoning	<p>Neither is a high-alert medicine.</p> <p>Avandia® has known, serious side-effects, including increased risk of myocardial infarction, but this is rare. Allergies are not common, but interactions with both medicines are possible and may lead to hypoglycaemia (if patient is treated with sulphonylurea and receives Avandia®) or serotonin syndrome (if the patient is already on a selective serotonin reuptake inhibitor (SSRI)). These are possible outcomes, but not likely.</p> <p>Drowsiness or altered mental state caused by commission of Avanza® would likely result and may need monitoring.</p> <p>Omission of Avanza® (thus abrupt withdrawal) may lead to clinical signs and symptoms of withdrawal, requiring treatment but not likely hospitalisation. Omission of Avandia® may affect glycaemic control, requiring increased monitoring.</p>	
Example 3	Lamictal® (lamotrigine) and Largactil® (chlorpromazine)	Moderate severity
Reasoning	<p>Neither direction of substitution is obviously more severe than the other.</p> <p>Commission of either medicine is not likely to cause severe and immediate harm – neither is a high-alert medicine with serious, common side-effects, and allergies or interactions are not common.</p> <p>Drowsiness caused by commission of Largactil® is likely to be the greatest consequence of commission.</p> <p>Omission of either medicine may cause significant issues either by resulting in a deterioration of mental status or seizure. It is probable that this would result in hospitalisation or increased care requirements.</p>	
Example 4	Prograf® (tacrolimus) and Prozac® (fluoxetine)	Major severity
Reasoning	<p>Tacrolimus is an immunosuppressant used to prevent rejection of transplanted tissue. Inadvertent administration of tacrolimus may cause immunosuppression and expose the patient to infection. Potentially more seriously, omission of tacrolimus may result in rejection of transplanted tissue or organs.</p>	
Example 5	morphine and hydromorphone	Serious severity
Reasoning	<p>Both morphine and hydromorphone are high-alert medicines.</p> <p>Hydromorphone is a high-potency opioid, and there have been a number of cases of serious patient harm, including death, resulting from inadvertent administration of hydromorphone when morphine was intended.</p>	

Appendix 3: Tall Man lettering risk assessment review panel 2020

- Associate Professor David Reith, Clinical Pharmacology and Toxicology, Dunedin School of Medicine, University of Otago
- Lucy McLaren, nurse practitioner, Emergency Department, Wairarapa District Health Board
- Rob Ticehurst, clinical lead pharmacist medicines governance and informatics, Auckland District Health Board
- Ruth Semprini, medical doctor, Capital & Coast District Health Board
- Susan Melvin, patient safety advisor, Health Quality & Safety Commission
- William Allan, medication safety specialist, Health Quality & Safety Commission

Appendix 4: Examples of medicine name pairs submitted that were not risk assessed

Medicine 1	Medicine 2	Reason
amitriptyline	quetiapine	The names do not share enough similarity to allow the application of Tall Man lettering. Different first letter.
chlorpromazine cHLORPROMAZIne	Lamictal (trade) laMICTAI	The names do not share enough similarity to allow the application of Tall Man lettering. Different first letter. Chlorpromazine and Lamictal are both already Tall Man but not as a specific name pair.
cilazapril	cilazapril plus hydrochlorothiazide	Mid Tall Man lettering unable to fix the combination product issue. Cilazapril plus hydrochlorthiazide is being withdrawn from 1 December 2020.
cilazapril plus hydrochlorthiazide	losartan plus hydrochlorthiazide	Mid Tall Man lettering unable to fix the combination product issue. Cilazapril plus hydrochlorthiazide is being withdrawn from 1 December 2020.
citalopram	fluoxetine	The names do not share enough similarity to allow the application of Tall Man lettering. Different first letter. Similar indication but not look-alike names.
Augmentin (trade)	erythromycin ERYthromycin	The names do not share enough similarity to allow the application of Tall Man lettering. Different first letter. And erythromycin already Tall Man.
erythromycin ERYthromycin	doxycycline	The names do not share enough similarity to allow the application of Tall Man lettering. Different first letter. And erythromycin already Tall Man.
fluoxetine	sertraline	The names do not share enough similarity to allow the application of Tall Man lettering. Different first letter.
Humalog (trade)	Humalog 25 (trade)	Tall Man cannot solve the risk of look-alike confusion.
lamotrigine	topiramate	The names do not share enough similarity to allow the application of Tall Man lettering. Different first letter.
Lantus SoloStar (trade)	Lantus cartridge (trade)	Tall Man cannot solve the risk of look-alike confusion.
NovoMix 30 Flexpen (trade)	NovoRapid Flexpen (trade)	Tall Man cannot solve the risk of look-alike confusion.
trastuzumab	trastuzumab emtansine	Mid Tall Man lettering unable to fix the conjugate issue. Prescribers should use the generic name and the brand name when prescribing these products to avoid confusion.

Appendix 5: Final risk assessment results of the Tall Man lettering review 2020

Medicine 1	Medicine 2	Name similarity		Strength similarity	Route similarity	Dose form similarity	Composite similarity score	Similarity rating	Severity rating	Comment
dabrafenib	dasatinib	0.600	42.000	10	5	5	62.000	1	Severe	From ACSQHC list
naloxone	naltrexone	0.700	49.000	0	5	0	54.000	2	Severe	Mid Tall Man lettering format applied
tamoxifen	tenoxicam	0.500	35.000	10	2.5	2.5	50.000	3	Severe	Mid Tall Man lettering format applied to tamoxifen only
clobazam	clonazepam	0.650	45.500	0	2.5	0	48.000	3	Severe	Mid Tall Man lettering format applied to clobazam under the exception rule (*). CLOBazam looks too much like CLONazepam (CLONazepam already on the list).
sorafenib	sunitinib	0.444	31.108	0	5	5	41.108	4	Severe	From ACSQHC list
mercaptamine (cysteamine)	mercaptapurine	0.714	50.001	10	5	5	70.001	1	Major	From ACSQHC list
dobutamine	dopamine	0.700	49.000	0	5	5	59.000	1	Major	Mid Tall Man lettering format applied
rifampicin	rifaximin	0.700	49.000	0	2.5	2.5	54.000	2	Major	From ACSQHC list
risperidone	ropinirole	0.455	31.815	10	5	2.5	49.315	3	Major	From ACSQHC list
sitagliptin	sumatriptan	0.546	38.185	10	2.5	2.5	53.185	2	Moderate	From ACSQHC list
fluoxetine	furosemide	0.500	35.000	10	2.5	2.5	50.000	3	Moderate	Tall Man lettering unlikely to solve the risk of look-alike confusion with fluoxetine all lowercase under the exception rule (*)
Yasmin (trade)	Yaz (trade)	0.417	29.169	10	5	5	49.169	3	Moderate	Mid Tall Man lettering format applied

Medicine 1	Medicine 2	Name similarity		Strength similarity	Route similarity	Dose form similarity	Composite similarity score	Similarity rating	Severity rating	Comment
bupropion	bupirone	0.611	42.777	0	5	5	52.777	2	Minor	Mid Tall Man lettering format applied
tamoxifen	topiramate	0.350	24.500	0	5	5	34.500	5	Severe	Not considered for Tall Man lettering. Tamoxifen had Tall Man lettering applied (above).
citalopram	clopidogrel	0.409	28.637	0	5	2.5	36.137	5	Major	Not considered for Tall Man lettering
enoxaparin	epoetin	0.400	28.000	0	5	5	38.000	4	Moderate	Not considered for Tall Man lettering
venlafaxine	verapamil	0.500	35.000	0	2.5	2.5	40.000	4	Moderate	Not considered for Tall Man lettering
pantoprazole	pravastatin	0.292	20.419	10	5	5	40.419	4	Minor	Not considered for Tall Man lettering
atorvastatin	simvastatin	0.625	43.750	20	5	5	73.750	1	Minimum	Not considered for Tall Man lettering
cetirizine	cilazapril	0.350	24.500	0	5	2.5	32.000	5	Minor	Not considered for Tall Man lettering
escitalopram	ezetimibe	0.250	17.500	10	5	5	37.500	5	Minor	Not considered for Tall Man lettering
tamsulosin	temazepam	0.250	17.500	0	5	5	27.500	5	Minor	Not considered for Tall Man lettering
candesartan	cilazapril	0.318	22.274	0	5	5	32.274	5	Minimum	Not considered for Tall Man lettering
clomipramine	imipramine	0.708	49.581	20	5	5	79.581	1	Excluded at severity assessment stage	Not considered for Tall Man lettering
prednisone	prednisolone	0.833	58.331	10	5	2.5	75.831	1	Excluded at severity assessment stage	Not considered for Tall Man lettering
citalopram	escitalopram	0.792	55.419	10	5	5	75.419	1	Excluded at severity assessment stage	Not considered for Tall Man lettering
amitriptyline	nortriptyline	0.731	51.156	10	5	5	71.156	1	Excluded at severity assessment stage	Not considered for Tall Man lettering
nicotinamide	nicotinic acid	0.679	47.502	10	5	5	67.502	1	Excluded at severity assessment stage	Not considered for Tall Man lettering
saxagliptin	sitagliptin	0.818	57.274	0	5	5	67.274	1	Excluded at severity assessment stage	Not considered for Tall Man lettering

Medicine 1	Medicine 2	Name similarity		Strength similarity	Route similarity	Dose form similarity	Composite similarity score	Similarity rating	Severity rating	Comment
flupenthixol	zuclopenthixol	0.679	47.502	10	2.5	5	65.002	1	Excluded at severity assessment stage	Not considered for Tall Man lettering
prochlorperazine	procyclidine	0.500	35.000	20	2.5	2.5	60.000	1	Excluded at severity assessment stage	Not considered for Tall Man lettering
lenalidomide	thalidomide	0.708	49.581	0	5	5	59.581	1	Excluded at severity assessment stage	Not considered for Tall Man lettering
cefaclor	cefalexin (cephalexin)	0.556	38.892	10	5	5	58.892	1	Excluded at severity assessment stage	Not considered for Tall Man lettering
donepezil	doxepin	0.556	38.892	10	5	5	58.892	1	Excluded at severity assessment stage	Not considered for Tall Man lettering
pantoprazole	propranolol	0.625	43.750	10	2.5	2.5	58.750	2	Excluded at severity assessment stage	Not considered for Tall Man lettering
amiloride	amlodipine	0.550	38.500	10	5	5	58.500	2	Excluded at severity assessment stage	Not considered for Tall Man lettering
chlorpromazine	chlorthalidone (chlortalidone)	0.607	42.497	10	2.5	2.5	57.497	2	Excluded at severity assessment stage	Not considered for Tall Man lettering
acitretin	isotretinoin	0.500	35.000	10	5	5	55.000	2	Excluded at severity assessment stage	Not considered for Tall Man lettering
cefalexin (cephalexin)	penicillin (phenoxymethyl penicillin)	0.350	24.500	20	5	5	54.500	2	Excluded at severity assessment stage	Not considered for Tall Man lettering. Tall Man lettering is unlikely to solve the risk of look-alike confusion.
ciclosporin (cyclosporin)	cyclizine	0.455	31.815	10	5	5	51.815	2	Excluded at severity assessment stage	Not considered for Tall Man lettering
sertraline	sumatriptan	0.364	25.452	20	2.5	2.5	50.452	3	Excluded at severity assessment stage	Not considered for Tall Man lettering
ciclosporin (cyclosporin)	cyclophosphamide	0.469	32.816	10	5	2.5	50.316	3	Excluded at severity assessment stage	Not considered for Tall Man lettering
chlorthalidone (chlortalidone)	clomipramine	0.429	30.002	10	5	5	50.002	3	Excluded at severity assessment stage	Not considered for Tall Man lettering
imipramine	indapamide	0.550	38.500	0	5	5	48.500	3	Excluded at severity assessment stage	Not considered for Tall Man lettering
Norflex (trade)	norfloxacin	0.546	38.185	0	5	5	48.185	3	Excluded at severity assessment stage	Not considered for Tall Man lettering
Daonil (trade)	donepezil	0.389	27.223	10	5	5	47.223	3	Excluded at severity assessment stage	Not considered for Tall Man lettering

Medicine 1	Medicine 2	Name similarity		Strength similarity	Route similarity	Dose form similarity	Composite similarity score	Similarity rating	Severity rating	Comment
amiodarone	amisulpride	0.455	31.815	10	2.5	2.5	46.815	3	Excluded at severity assessment stage	Not considered for Tall Man lettering
quetiapine	quinapril	0.500	35.000	0	5	5	45.000	3	Excluded at severity assessment stage	Not considered for Tall Man lettering
citalopram	paroxetine	0.200	14.000	20	5	5	44.000	4	Excluded at severity assessment stage	Not considered for Tall Man lettering
loratadine	lorazepam	0.550	38.500	0	2.5	2.5	43.500	4	Excluded at severity assessment stage	Not considered for Tall Man lettering
pantoprazole	paroxetine	0.333	23.331	10	5	5	43.331	4	Excluded at severity assessment stage	Not considered for Tall Man lettering
valaciclovir	vigabatrin	0.333	23.310	10	5	5	43.310	4	Excluded at severity assessment stage	Not considered for Tall Man lettering
diazepam	doxazosin	0.389	27.223	10	2.5	2.5	42.223	4	Excluded at severity assessment stage	Not considered for Tall Man lettering
cefalexin (cephalexin)	ciprofloxacin	0.385	26.922	10	2.5	2.5	41.922	4	Excluded at severity assessment stage	Not considered for Tall Man lettering
dexamethasone	doxazosin	0.385	26.922	10	2.5	2.5	41.922	4	Excluded at severity assessment stage	Not considered for Tall Man lettering
gabapentin	quetiapine	0.300	21.000	10	5	2.5	38.500	4	Excluded at severity assessment stage	Not considered for Tall Man lettering
methotrexate	metolazone	0.458	32.081	0	2.5	2.5	37.081	5	Excluded at severity assessment stage	Not considered for Tall Man lettering
metoclopramide	metronidazole	0.464	32.501	0	2.5	2.5	37.501	5	Excluded at severity assessment stage	Not considered for Tall Man lettering
erythromycin	metronidazole	0.308	21.539	10	2.5	2.5	36.539	5	Excluded at severity assessment stage	Not considered for Tall Man lettering
tacrolimus	tamsulosin	0.450	31.500	0	2.5	2.5	36.500	5	Excluded at severity assessment stage	Not considered for Tall Man lettering
clonazepam	colchicine	0.300	21.000	10	2.5	2.5	36.000	5	Excluded at severity assessment stage	Not considered for Tall Man lettering
allopurinol	atorvastatin	0.333	23.331	0	5	2.5	30.831	5	Excluded at severity assessment stage	Not considered for Tall Man lettering
allopurinol	azithromycin	0.286	19.999	0	5	2.5	27.499	5	Excluded at severity assessment stage	Not considered for Tall Man lettering
metoclopramide	midazolam	0.286	19.999	0	2.5	2.5	24.999	5	Excluded at severity assessment stage	Not considered for Tall Man lettering
trimethoprim	Trisul (trade)	0.208	14.581	0	2.5	2.5	19.581	5	Excluded at severity assessment stage	Not considered for Tall Man lettering

Appendix 6: Aotearoa New Zealand Tall Man lettering list (updated April 2020)

An Excel version is also available on the Commission's website: www.hqsc.govt.nz/our-programmes/medication-safety/publications-and-resources/publication/1281.

* Not capitalised as part of the Tall Man lettering methodology exception rules list published December 2013.

Medicine	Medicine class	Year
aFATinib	Tyrosine kinase inhibitors ('nibs')	2020
aLEMTUzumab	Monoclonal antibodies ('mabs')	2020
ALKeran	Medicines used predominantly in cancer therapy	2013
aLLOPURINol	General	2013
amINOPHYLLIne	General	2013
amIODAROne	General	2013
amiSULPIRIDe	General	2013
amITRIPTYLIne	General	2013
amLODIPIne	General	2013
aPomine	General	2013
arATAC	General	2013
arOPAX	General	2013
aTENOLol	General	2013
aTEZOLIzumab	Monoclonal antibodies ('mabs')	2020
aTROpt	General	2013
avaSTIN	Medicines used predominantly in cancer therapy	2013
avaXIM	Medicines used predominantly in cancer therapy	2013
aVomine	General	2013
aXITinib	Tyrosine kinase inhibitors ('nibs')	2020
azATHIOPRINE	General	2013
azITHROMYCIN	General	2013
aZopt	General	2013
BENZATHINE benzylpenicillin	General	2013
benzylpenicillin*	General	2013
beVACIzumab	Monoclonal antibodies ('mabs')	2020
bisACODYI	General	2013
bisOPROLOI	General	2013
buDESONide	General	2013
buMETANide	General	2013
buPROPION	General	2020
buSPIRONE	General	2020
caLTRate	General	2013
caPTOPRII	General	2013
caRAFate	General	2013
CARBAMazepine	General	2013
carbIMAZOLe	General	2013

Medicine	Medicine class	Year
cARBOplatin	Medicines used predominantly in cancer therapy	2013
caRVEDILOI	General	2013
cefaCLOR	Cephalosporins	2020
cefaLEXin	Cephalosporins	2013
cefaZOLin	Cephalosporins	2013
cefEPIME	Cephalosporins	2013
cefOTAXIME	Cephalosporins	2013
cefOXITIN	Cephalosporins	2013
ceftAROLine	Cephalosporins	2020
cefTAZIDIME	Cephalosporins	2013
cefTRIAZONE	Cephalosporins	2013
cefUROXIME	Cephalosporins	2013
ceIAPRAM	General	2013
ceIEBREX	General	2013
cephaLEXin	Cephalosporins	2013
cephaZOLin	Cephalosporins	2013
CETUximab	Medicines used predominantly in cancer therapy	2013
cHLORPROMAZIne	General	2013
ciclosPORIN	General	2020
ciprAMIL	General	2013
cIPROFLOXAcin	General	2013
ciprOXIN	General	2013
cISplatin	Medicines used predominantly in cancer therapy	2013
cLARITHROMYcin	General	2013
cIINDAmycin	General	2013
clobazam*	General	2020
cLOMIPHEne	General	2013
cLOMIPRAMIne	General	2013
CLONazepam	Benzodiazepines	2013
cloNIDine	General	2013
cLOZAPine	General	2013
cOBIMETinib	Tyrosine kinase inhibitors ('nibs')	2020
coUMADIN	General	2013
coVERSYL	General	2013
cyclIZINE	Medicines used predominantly in cancer therapy	2013
cycIOBLASTIN	Medicines used predominantly in cancer therapy	2013
CYCLOPHOSPHamide	Medicines used predominantly in cancer therapy	2013
cyclosERINE	General	2013
cyclosPORIN	General	2013
daBRAFEInib	Tyrosine kinase inhibitors ('nibs')	2020
daCTINomycin	Medicines used predominantly in cancer therapy	2013
daPTomycin	Medicines used predominantly in cancer therapy	2013
daSATinib	Tyrosine kinase inhibitors ('nibs')	2020
DAUNOrubicin	Medicines used predominantly in cancer therapy	2013

Medicine	Medicine class	Year
DEPO-medrol	General	2013
depo-PROVERA	General	2013
Dlazepam	Benzodiazepines	2013
dIGOXin	General	2013
diPYRIDAMOLe	General	2013
diSOPYRAMIDe	General	2013
doBUTamine	General	2020
DOCEtaxel	Medicines used predominantly in cancer therapy	2013
doPamine	General	2020
doTHIEpin	General	2013
dOXAZOSin	General	2013
doXEpin	General	2013
DOXOrubicin	Medicines used predominantly in cancer therapy	2013
DULoxetine	SSRI/SNRI	2013
ERYthromycin	General	2013
floxetine*	SSRI/SNRI	2013
fluARlx	General	2013
flupENTHIXOL	General	2013
flupHENAZINE	General	2013
fluVAx	General	2013
fVOXAMine	SSRI/SNRI	2013
folic acid*	General	2013
foliNlc acid	General	2013
gliBENCLAMide	Sulphonylurea agents	2013
gliCLAZide	Sulphonylurea agents	2013
gliPIZide	Sulphonylurea agents	2013
humALOG	General	2013
humULIN	General	2013
hyoscine BUTYLBromide	General	2013
hyoscine HYDRObromide	General	2013
IDArubicin	Medicines used predominantly in cancer therapy	2013
IFOSFamide	Medicines used predominantly in cancer therapy	2013
imipramine*	General	2013
imUPRine	General	2013
INDEral	General	2013
INFLIximab	Medicines used predominantly in cancer therapy	2013
isopto CARpine	General	2013
isopto HOMATROpine	General	2013
ISOtretinoin	General	2013
januMET	General	2013
januVIA	General	2013
ketALAR	General	2013
ketOROLAC	General	2013
laMICTAI	General	2013

Medicine	Medicine class	Year
laMISII	General	2013
lamIVUDine	General	2013
lamOTRIGine	General	2013
lanTUs	General	2013
lanVIs	General	2013
laPATinib	Tyrosine kinase inhibitors ('nibs')	2020
laRGACTII	General	2013
LEUKeran	Medicines used predominantly in cancer therapy	2013
LORazepam	Benzodiazepines	2013
loxaLATE	General	2013
loxaMINE	General	2013
maxiDEX	General	2013
maxiTROL	General	2013
meDROXYPROGESTERone	General	2013
m-eNALAPRIL	General	2013
mercaptAMine (cysteamine)	General	2020
mercaptOPURine	General	2020
m-eSLON	General	2013
methADONe	General	2013
methHOTREXATE	General	2013
methYLPHENIDATE	General	2013
methylprednisolone ACETate	General	2013
methylprednisolone SODIUM SUCCINate	General	2013
metOCLOPRAMIDe	General	2013
metoPROLOL	General	2013
MOXIfI	General	2013
MYLeran	Medicines used predominantly in cancer therapy	2013
nalOXone	General	2020
nalTREXone	General	2020
neO-MERCAZOLe	General	2013
NEOral	General	2013
neUROKARe	General	2013
niFEDIPine	General	2013
niMODIPine	General	2013
NITRazepam	Benzodiazepines	2013
NORfI	General	2013
norMISON	General	2013
norVASC	General	2013
novoMIX	General	2013
novoRAPID	General	2013
novoSEVEN	General	2013
oBINUTUZumab	Monoclonal antibodies ('mabs')	2020
oMALizumab	Monoclonal antibodies ('mabs')	2020

Medicine	Medicine class	Year
OXazepam	Benzodiazepines	2013
OXCARBazepine	General	2013
oxyCONTIN	General	2013
oxyNORM	General	2013
PACLItaxel	Medicines used predominantly in cancer therapy	2013
PARoxetine	SSRI/SNRI	2013
pAZOPanib	Tyrosine kinase inhibitors ('nibs')	2020
pegFILGRASTIM	General	2013
pegINTERFERON	General	2013
penicillAMINE	General	2013
pERTUZumab	Monoclonal antibodies ('mabs')	2020
PHENOXYMETHylpenicillin	General	2013
prEDNISone	General	2013
primaCIN	General	2013
primaCOR	General	2013
primAQUIne	General	2013
primaXIN	General	2013
primIDOne	General	2013
proCHLORPERazine	General	2013
procYCLIDine	General	2013
proGRAF	General	2013
proMETHazine	General	2013
propOFol	General	2013
propRANOLol	General	2013
proZAC	General	2013
QUETIAPine	General	2013
qulNine	General	2013
rifaMPICin	General	2020
rifaXIMin	General	2020
riSPERIDONe	General	2020
RITUximab	Medicines used predominantly in cancer therapy	2013
rOPINIROLe	General	2020
SERTRALine	General	2013
Strolimus	General	2013
siTagliptin	General	2020
solu-CORTEF	General	2013
SOLU-medrol	General	2013
soRAFENib	Tyrosine kinase inhibitors ('nibs')	2020
sulfaDlazine	General	2013
sulfaSALazine	General	2013
sUMATRIPTAn	General	2020
sUNITinib	Tyrosine kinase inhibitors ('nibs')	2020
TACrolimus	General	2013
TAMoxifen	General	2020

Medicine	Medicine class	Year
tEModal	General	2013
toFRANIL	General	2013
toPAMAX	General	2013
tRAMadol	General	2013
tretinoin*	General	2013
trimEPRAZINE	General	2013
trimETHOPRIM	General	2013
valAciclovir	General	2013
valGANciclovir	General	2013
vinBLASTine	Medicines used predominantly in cancer therapy	2013
vinCRISTine	Medicines used predominantly in cancer therapy	2013
vinORELBine	Medicines used predominantly in cancer therapy	2013
yasMIN	General	2020
yaZ	General	2020