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# Eliminating Error-prone Abbreviations, Symbols, and Dose Designations

# The Problem

*Ambiguous medical notations are one of the most common and preventable causes of medication errors.*

*Drug names, dosage units, and directions for use should be written clearly to minimize confusion.*

# Consequences of Using Error-Prone Abbreviations

- **Misinterpretation may lead to mistakes that result in patient harm**
- **Delay start of therapy due to time spent for clarification**

# Implement “Do Not Use” List

The Institute for Safe Medication Practices (ISMP) and the Food and Drug Administration recommend that ISMP’s list of error-prone abbreviations be considered whenever medical information is communicated.

Complete list is located at:

[www.ismp.org/Tools/errorproneabbreviations.pdf](http://www.ismp.org/Tools/errorproneabbreviations.pdf)

# Consider All Communication Forms

- **Written orders**
- **Internal communications**
- **Telephone/verbal prescriptions**
- **Computer-generated labels**
- **Labels for drug storage bins**
- **Medication administration records**
- **Preprinted protocols**
- **Pharmacy and prescriber computer order entry screens**

# Short List of Error-Prone Notations\*

The following notations should NEVER be used.

<u>Notation</u>	<u>Reason</u>	<u>Instead Use</u>
U	Mistaken for 0, 4, cc	“unit”
IU	Mistaken for IV or 10	“unit”
QD	Mistaken for QID	“daily”

\*Comprises “do not use” list required for JCAHO accreditation

# Short List of Error-Prone Notations Continued

<u>Notation</u>	<u>Reason</u>	<u>Instead Use</u>
QOD	Mistaken for QID, QD	“every other day”
Trailing zero (X.0 mg)	Decimal point missed	“X mg”
Naked decimal point (.X mg)	Decimal point missed	“0.X mg”

# Short List of Error-Prone Notations Continued

<u>Notation</u>	<u>Reason</u>	<u>Instead Use</u>
MS	Can mean morphine sulfate or magnesium sulfate	“morphine sulfate”
$\text{MSO}_4$ and $\text{MgSO}_4$	Can be confused with each other	“morphine sulfate” or “magnesium sulfate”
cc	Mistaken for U	“mL”

# Short List of Error-Prone Notations

## Continued

### Notation

Drug name  
abbreviations  
(especially those  
ending in “l”)

> or <

μ

### Reason

Mistaken for other drugs  
or notations

Mistaken as opposite  
of intended

Mistaken for mg

### Instead Use

Complete  
drug name

“greater than”  
or “less than”

“mcg”

# Short List of Error-Prone Notations

## Continued

<u>Notation</u>	<u>Reason</u>	<u>Instead Use</u>
@	Mistaken for 2	“at”
&	Mistaken for 2	“and”
/	Mistaken for 1	“per” rather than a slash mark
+	Mistaken for 4	“and”

# Short List of Error-Prone Notations

## Continued

<u>Notation</u>	<u>Reason</u>	<u>Instead Use</u>
AD, AS, AU	Mistaken for OD, OS, OU	“right ear,” “left ear,” or “each ear”
OD, OS, OU	Mistaken for AD, AS, AU	“right eye,” “left eye,” or “each eye”
D/C, dc, d/c	Misinterpreted as “discontinued” when followed by list of medications	“discharge” or “discontinued”

# Other Good Practices

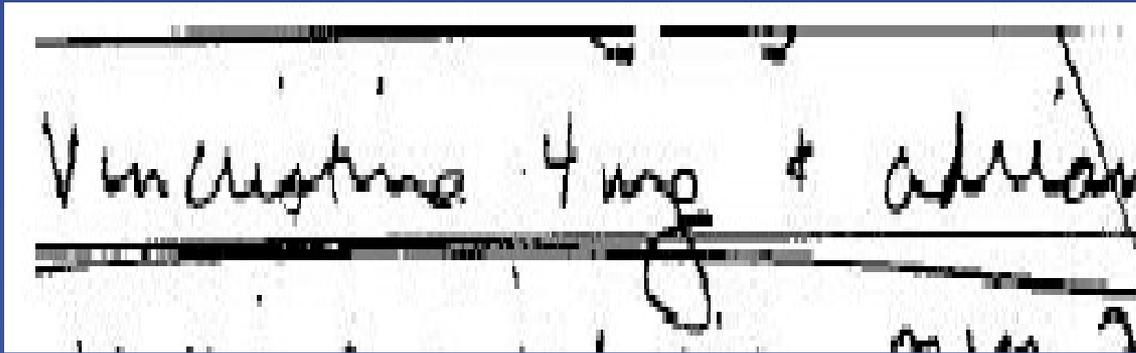
- **Drug name abbreviations can easily be confused. Always write out complete drug name.**
- **Apothecary units are unfamiliar to many practitioners. Always use metric units.**

# Examples

Humalog 44/2u/6u  
Lantus 14u @ HS

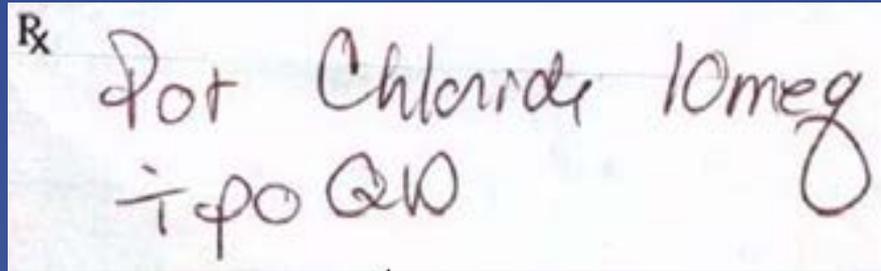
Intended dose of 4 units in patient history interpreted as 44 units. “U” should be written out as “unit.”

# Examples



Intended dose of “.4 mg” interpreted as 4 mg from medication order. Should be written as “0.4 mg.”

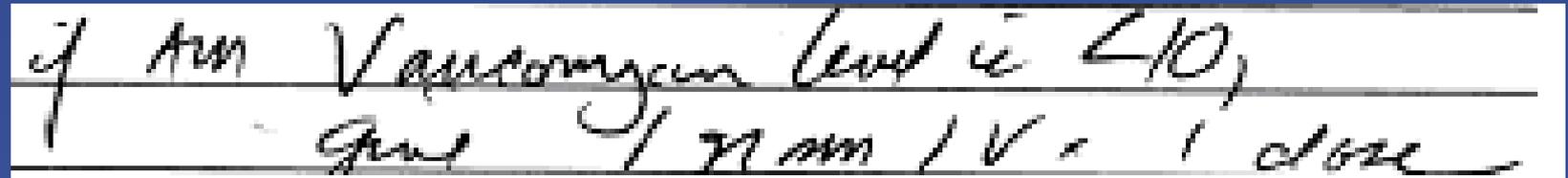
# Examples



Rx Pot Chloride 10meg  
i po QID

**“Potassium chloride QD” in medication order interpreted as QID. Should be written as “daily.”**

# Examples



if Am Vancomycin level is <10,  
give 1 gram IV q 12hr

**Intended recommendation of “less than 10”  
was interpreted as 4. “<” should be written out  
as “less than.”**

# Examples



**“QD” in advertisement should be written out as “daily.”**

# Examples

maintain therapy who received three to six months of unfractionated heparin (10,000 U subcutaneously twice daily), as compared with 1 of 40 patients who received dalteparin (5000 U subcutaneously twice daily) for the same length of time.<sup>28</sup>

**“U” in prominent professional journal article should be written out as “unit.”**

# Do Not Use Error-Prone Abbreviations Even in Print

- **May still be confused**
- **Perpetuates the impression that they are acceptable**
- **May be copied into written orders**

# Recommendations for Healthcare Professionals

- **Avoid ambiguous abbreviations in written orders, computer-generated labels, medication administration records, storage bins/shelf labels, and preprinted protocols.**
- **Work with computer software vendors to make changes in electronic order entry programs.**
- **Provide examples when educating staff on how using error-prone abbreviations have led to serious patient harm.**
- **Provide staff with ISMP's list of error-prone abbreviations.**
- **Introduce healthcare students to the list of error-prone abbreviations.**

# Recommendations for Pharmaceutical Industry

- **Review existing drug labeling and packaging as well as new drug applications for use of error-prone abbreviations.**
- **Eradicate use of ambiguous abbreviations in product advertising (both in graphics and text).**
- **Check for error-prone abbreviations in all communications vehicles, including slides, promotional kits, and sales staff training materials.**
- **Include ISMP's list in corporate editorial style guidelines.**
- **Incorporate list into software and medical device design.**

# Recommendations for Medical Communications/Publishing Professionals

- Make “do not use list” of notations as part of publishing style manuals and internal style guides for clinical writing.
- Add the list of error-prone abbreviations to instructions for journal authors.
- Review all internal and external communications products for ambiguous abbreviations.
- Eliminate error-prone abbreviations in company-wide educational and training sessions.

# Other Resources

**For more information and tools to help promote safe practices, visit:**

[www.ismp.org/tools/abbreviations](http://www.ismp.org/tools/abbreviations)

or

[www.fda.gov/cder/drug/MedErrors](http://www.fda.gov/cder/drug/MedErrors)