

WASCLA Panel Session B

The Role of Technology in Language Services:
Help or Hype?



Translation of Public Health Information for a Diverse Public
University of Washington

TransPHorm: Potential of Machine Translation to Help Meet Public Health Translation Needs

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Language Barriers

- ▶ LEP = persons who do not speak English as their primary language and who have a limited ability to speak, write or understand English
- ▶ Over 25 million people living in the U.S. have LEP



Problem

Lack of access to language-appropriate health information contributes significantly to poor health literacy in LEP populations and consequently to poor health outcomes (IOM, 2004)

Disparities:

- ▶ Less access to health education
- ▶ Less access to preventative health screening
- ▶ Poorer health status than English-speaking minority groups



Policy: Federal Requirements

- ▶ Civil Rights Act (1964) - no individual be denied access to services provided by a program receiving federal funds on the grounds of race, color or national origin.
- ▶ DHHS guidelines (2003) - recipients of federal funds must take “reasonable steps to provide meaningful access to Limited English Proficiency persons”. This includes making available written translations of vital documents.



Machine Translation for Health



Goal: Improve access to multilingual public health information for Limited English Proficiency (LEP) populations through innovative machine translation technology (NLM R01).



Question?

Using statistical machine translation can we make acceptable systems for public health practice that produce quality translations, but for less time and money?



Statistical Machine Translation

- ▶ The translation of text from one human language to another by a computer that is “trained” to translate based on vast amounts of previously translated text.
- ▶ Getting better all the time, but not perfect.



Poor translations, but getting better

2010

- ▶ *Source:* Clean unwashable wallpaper with commercial putty-like wallpaper cleaner.
- ▶ *Translation:* Fondos de escritorio de Limpieza lavable con masilla un limpiador comercial fondo de pantalla.
- ▶ *Back translation:* Depths/backgrounds of desk of cleaning washable with putty a commercial cleaner screener background.

2014

- ▶ *Source:* Clean unwashable wallpaper with commercial putty-like wallpaper cleaner.
- ▶ *Translation:* Limpia fondos no lavables con papel pintado comercial de masilla-como limpiador.
- ▶ *Back translation:* Clean nonwashable wallpaper with putty -like cleaner commercial wallpaper.



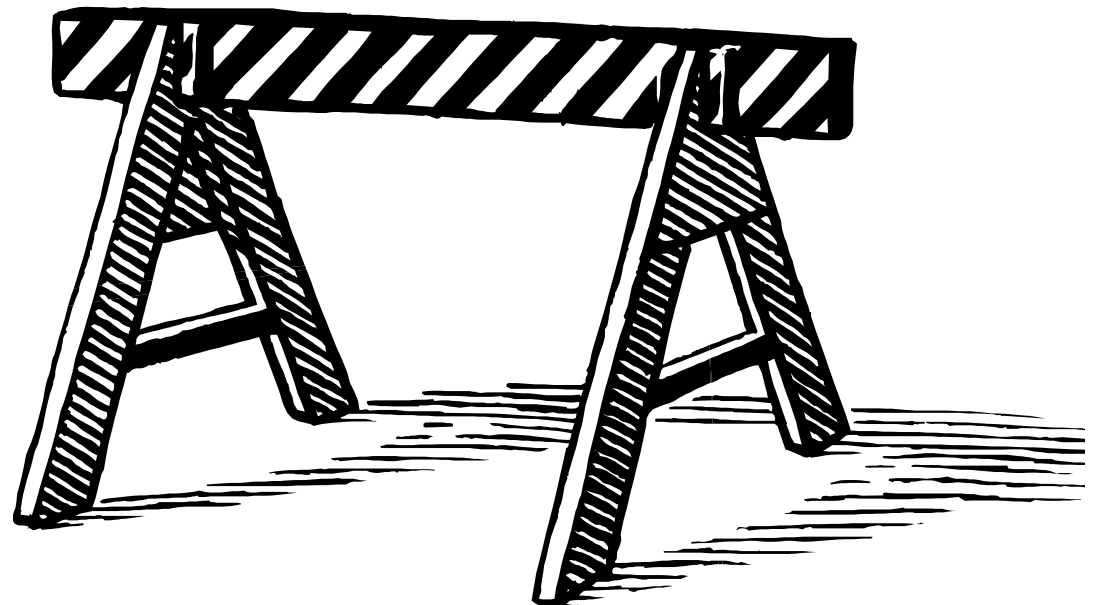
Translation Online Survey Local Health Departments (LHDs) in DHHS Region X

- ▶ Alaska
- ▶ Idaho
- ▶ Oregon
- ▶ Washington



Barriers to Translation

- Cost
- Staff
- Language expertise
- Time
- Lack of awareness



Health Department Survey results (n=43)

- ▶ 81.3% of the health departments currently translate at least some documents
- ▶ 70.6% health departments reported they did not have any designated funds for translation
- ▶ 30.6% had used some form of machine translation for translations
- ▶ 78.6 % said they would be open to using an automated translation tool for public health



Top concerns with using MT for translation

- ▶ **General errors or low quality**
 - ▶ Accuracy
 - ▶ Cultural appropriateness
 - ▶ Too literal or not using colloquialisms
 - ▶ Doesn't recognize dialects

- ▶ **Cost**



English to Spanish

Error Category	%
Morphological error	24.39
Word sense error	21.97
Syntax error	18.43
Missing word or untranslated word	8.18



Time for translation



Human
Translation

VS



+



Machine Translation + Post-Editing

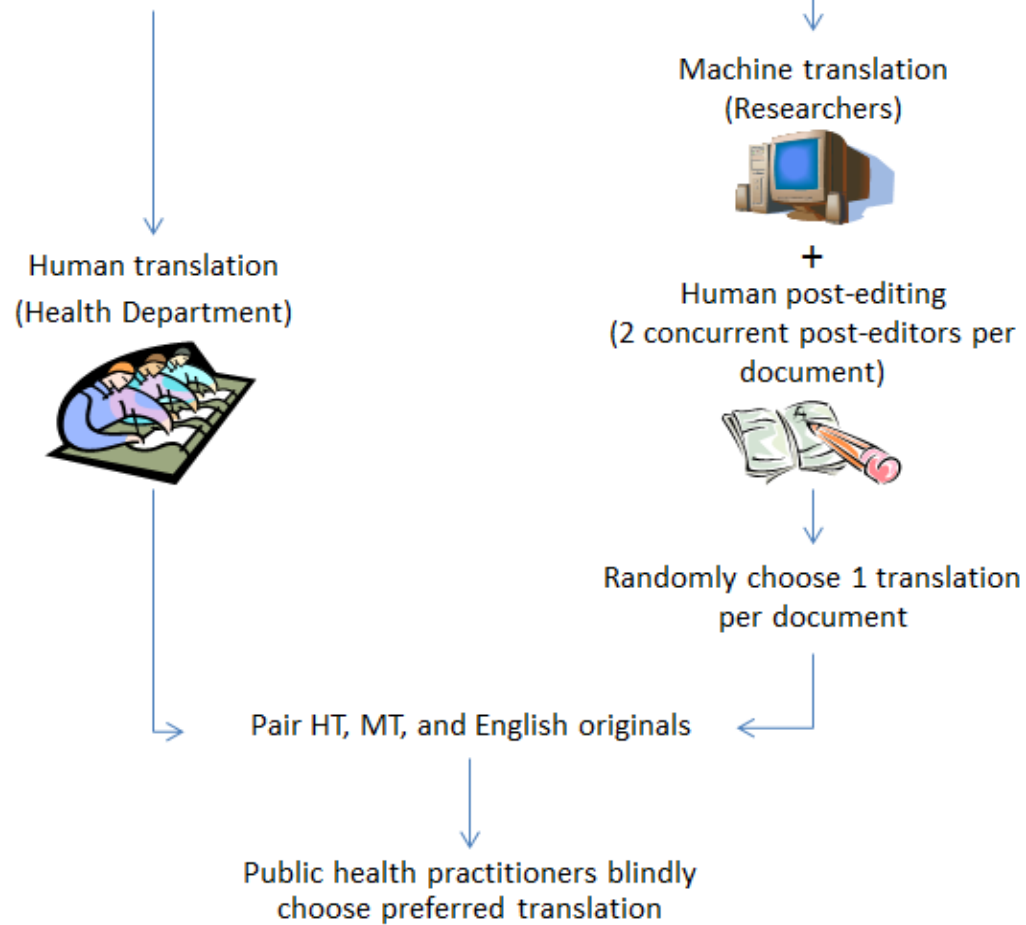
- ▶ Track average time for current human translation process at public health dept.
- ▶ Track time for MT + human post-editing by PH professionals



MT + Post-Editing Quality Experiments



Health promotion documents from local health dept.



Results (n =30)

	Manual	MT + Post-edit
Time	17 hrs - 6 days	3 min – 1 hr
Costs	\$130-1200	<\$30
Quality	10 preferred	10 preferred

*Findings published in the *Journal of Public Health Management and Practice*, Sept. 2013



What we learned

- ▶ Major barriers to translation are cost and shortage of qualified translators
- ▶ Attitudes toward MT
 - ▶ Mostly unfamiliar with MT solutions
 - ▶ Concerns about quality
 - ▶ Open to using MT if quality and low cost could be assured

Findings: With post-editing we can produce quality MT Spanish translations at lower costs



Other Languages

Chinese Translations (Traditional)

- ▶ Errors are word sense (40%), word order (22%), missing word (16%), superfluous word (14%)
- ▶ Much more difficult to find bilingual translators in health
- ▶ Post editing much more difficult
- ▶ Blind ratings consistently chose manual translation.



LEP and EMS

- ▶ In a survey of 700 EMS providers, 73% reported that their interactions with LEP individuals are extremely challenging
- ▶ EMS respondents expressed a particular interest in tools and technologies that would help them communicate with LEP individuals.



EMS

- ▶ Kent Fire Department conducted 3 focus groups with firefighters to ask about working with LEP
- ▶ Variety of strategies used:
 - ▶ **Neighbor or family member**
 - ▶ Language boards
 - ▶ Language Line
 - ▶ Google translate
 - ▶ Trialing QuickSpeak



QuickSpeak

- ▶ QuickSpeak (<http://www.esosolutions.com/our-products/epcr-suite/quickspeak/>), verbal translation software tool designed as an add-on for their existing patient data management software (ESO)
- ▶ QuickSpeak provides verbal translations of a set of standard English yes/no questions asked by first responders.



Thank you!

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Questions?

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