Supporting the PROTECT Initiative

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INTRODUCTION AND BACKGROUND

• Dosage errors are the most common medical errors
  o 1.5 million people are affected annually
  o 200,000 U.S. poison-control cases per year
  o 3.6 billion in medical costs
  o 30% of cases are children under age 6

• The PROTECT Initiative (Preventing Overdoses and Treatment Errors in Children Taskforce)
  o Launched in 2008
  o Aims to highlight medication dose error causes
  o Provides recommendations to increase prevention

GOALS

Develop script to parse XML files
Produce output with the number of labels using ml or tsp and the types of dosing tools
Examine children hospital websites for dosage measurements

METHODOLOGY AND CONCLUSIONS

• The DailyMed database contains XML files with the text for tens of thousands of medication labels, including...
  o Pills
  o Tablets
  o Creams and Lotions
  o Orally administered liquids (our focus)

• We created a parser that searched for...
  o Keywords to determine if it the label was for an orally administered liquid medication (seen to the right)
  o The dosage units used on the medication label
  o Any dosing tools mentioned on the label
  o Name of the product
  o Name of the manufacturer

• We searched 42,726 OTC labels and 9,590 prescription labels
  o ~5% of OTC and ~15% of prescription labels use non-metric units

• We also searched hospital websites to discover if they used metric or non-metric units
  o 80% did not have dosing units on the site
  o 8% used metric
  o 10% included both
  o 2% only used non-metric

DATA AND VISUALIZATIONS

• CDC Recommendation is ml, (only represents 25% of the dataset)

• 350+ Companies produce a product using a non-metric unit

• Syringe (CDC’s Recommended Tool) is present in a ¼ of these 335 drug labels

• Non-Metric units is prevalent across most companies

• A total of 15% of products in OTC & RX Datasets use Non-Metric Units

FUTURE GOALS

• Evaluate and analyze other sources of medication dosage recommendations:
  o Forums
  o Social Media

• Extract relevant information directly from label images
  o XML files may not always be available
  o Use Super-resolution and Optical Character Recognition
  o Some examples in image to the left

COMPLETE GOALS

✓ Develop script to parse XML files
✓ Produce output with the number of labels using ml or tsp and the types of dosing tools
✓ Examine children hospital websites for dosage measurements

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