Lessons Learned from
“Newborn Screening for Pompe Disease:
A Synthesis of the Evidence”

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December 18, 2006
Pompe Disease

- This year, FDA approved licensure for Myozyme (alglucosidase alfa) for Pompe disease
- Screening is possible with dried blood spots
- Screening will identify those with late-onset disease
- Pilot Screening has begun in Taiwan
What are the options for weighing evidence for important policy decisions?
Reviews

• Traditional
  – Narrative review
  – Often written by an expert
  – Might be biased

• Systematic
  – Has methods for
    • Identification of data
    • Inclusion/exclusion criteria
    • Synthesis
  – May combine data qualitatively or quantitatively (meta-analysis)
  – May form the basis for cost-effectiveness studies
Challenges in Systematic Reviews

• Synthesizing studies of different
  – Fundamental Designs
  – Study Populations
  – Interventions
  – Measures
  – Quality

• Publication bias

• Lack of studies – may be especially problematic for children and rare conditions
Approach to Review

• Focus on infantile Pompe Disease
• Used separate content and methods experts
• Cast a broad net for data
  – Included unpublished data
  – Excluded animal data
  – Did not use standard study quality assessment measures
Methodological Issues: Common to All Rare Conditions

- Many important data are not published in the peer-reviewed literature
- Randomized trials in human subjects are unlikely to be done
- Quality scores do not easily apply to small studies of rare conditions
- Long-term outcomes are often not available
- Meta-analysis is not possible if studies are heterogeneous
Recommendations

• Should be explicit
• Should be actionable
• Do not have to be a “Yes”, “No”, or “Insufficient Evidence”
• Could be linked to decision analytic model (presented by Dr. Downs)
US Preventive Services Task Force

• A – Strongly Recommends
• B – Recommends
• C – No Recommendation For or Against
• D – Recommends Against
• I – Insufficient Evidence to Recommend For or Against
US Preventive Services Task Force

• A
  – Colorectal cancer for those ≥50 yrs
  – Hypertension for those ≥18 yrs
• B
  – Amblyopia, strabismus, and visual acuity in children < 5 yrs
  – Adult depression, if systems in place for follow-up care
• C
  – Lipid disorders in younger adults in the absence of risk factors for CHD
• D
  – Idiopathic Scoliosis
  – Testicular Cancer
• I
  – Developmental Dysplasia of the Hip
  – Newborn Hearing
  – Speech and Language Delay for children < 5 yrs
Possible Recommendations

• Universal Screening Recommended*
• Targeted Screening Recommended* in areas with high prevalence
• Pilot Study Recommended
• Pivotal Studies Required
• No General Recommendation
• Recommended Against

*Once follow-up infrastructure is in place
Questions?