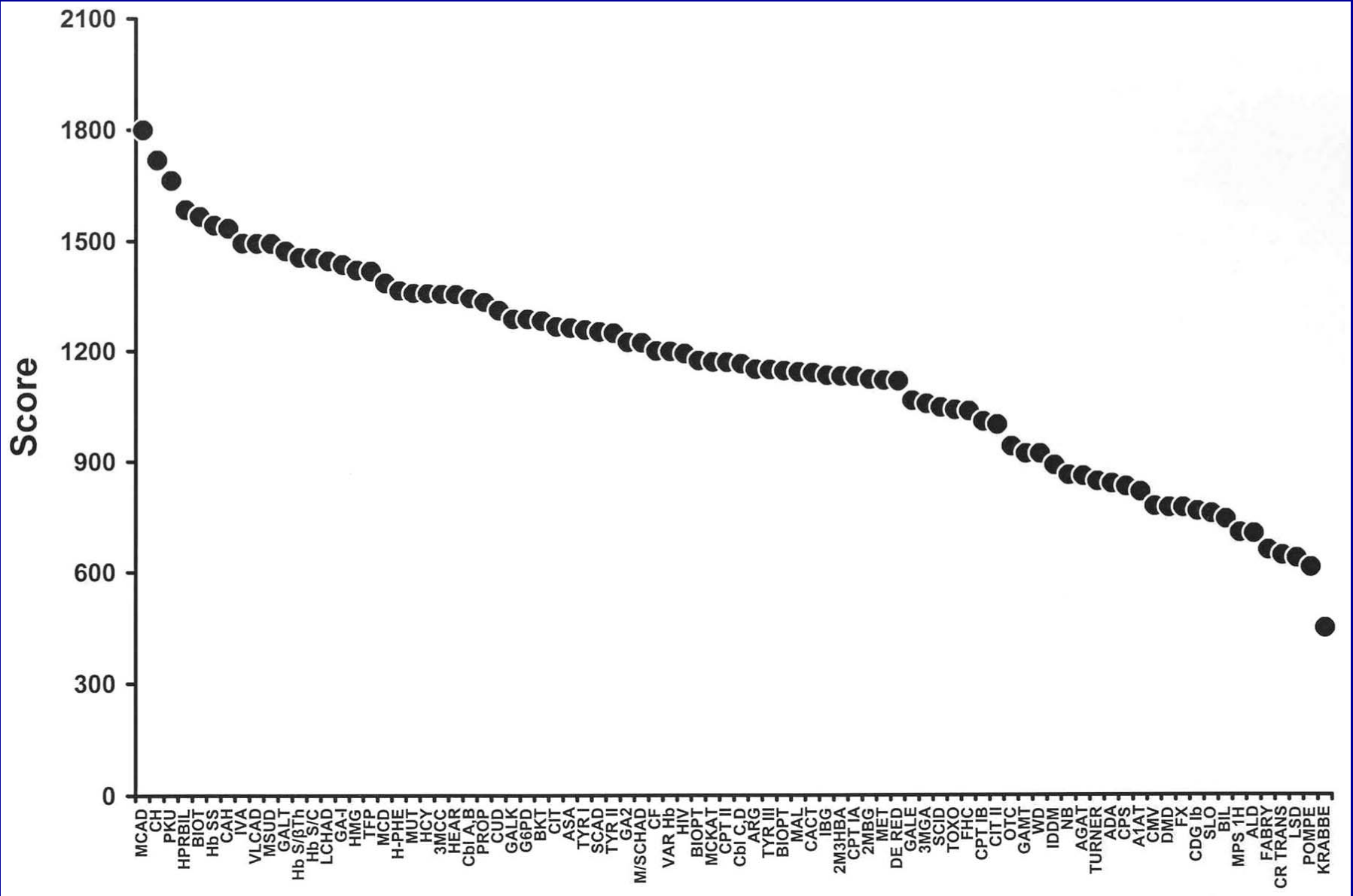


Lessons Learned from  
“Newborn Screening for Pompe Disease:  
A Synthesis of the Evidence”

Alex R. Kemper, MD, MPH, MS

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  - Included unpublished data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  $\geq 50$  yrs
  - Hypertension for those  $\geq 18$  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?