

OTA's Newborn Screening Study: Relevance to Today's Issues?

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Disorders and Genetic Diseases in Newborns and
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OTA's Newborn Screening Study

- Analysis in 1986-7; published Feb 1988
- Chapter 5 in “Healthy Children: Investing in the Future”
http://www.wws.princeton.edu/~ota/ns20/alpha_f.html
- Response to Congressional Committee Request: “Tell us what preventive measures are cost-effective for infants and children.”
- OTA studied early prenatal care, newborn screening, well-child care, accidental injuries, child maltreatment

Findings on Newborn Screening

- USA and Canada are the only developed countries without a national screening program.
- Lack of a coordinated network of newborn screening services in some areas may reduce the overall effectiveness of newborn screening.
- Expanding newborn screening strategies to include additional diseases (HC,GA,MSUD) beyond PKU and CH, and/or to take second specimen would save more newborns from death and disability, but the incremental costs per case found would be high.

Limitations of OTA's CEA

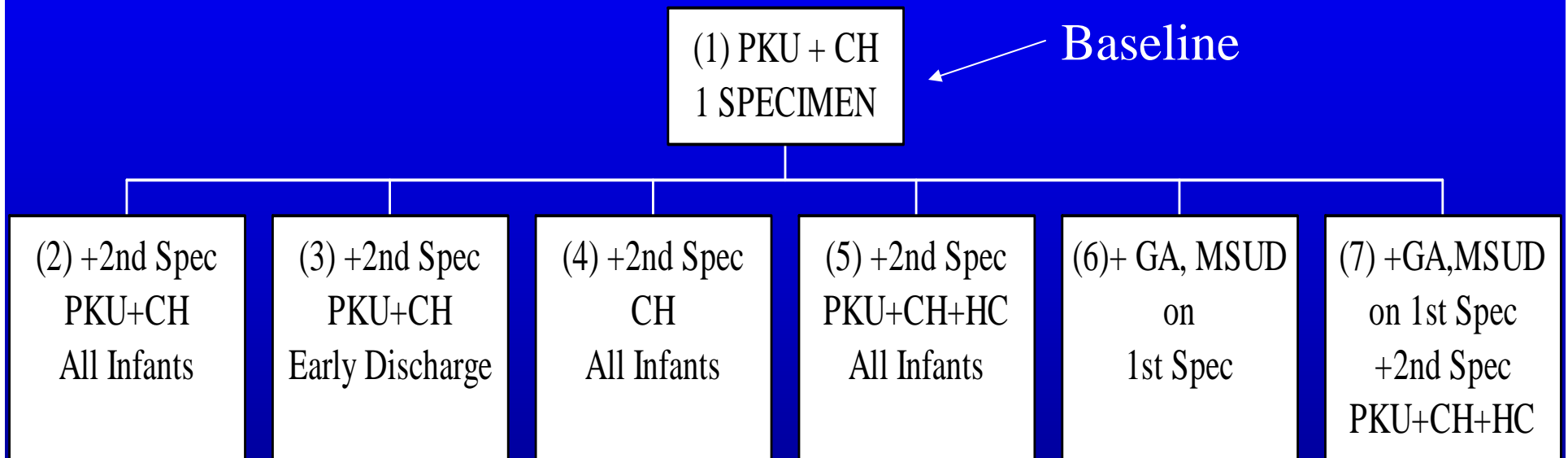
- Outcome measure outmoded (cases detected per 100,000 infants screened)
- Interpretation faulty: Cost probably NOT high if converted to healthy life-years saved
- Discount rate on future costs (7%) higher than today's CEA standard (3%)
- Data limited on outcomes of disease and of screening.
- Screening technologies old.

Elements of Screening Intervention

- Number of samples, timing relative to birth, and location of sample collection
- Diseases to be tested for
- Screening technology(ies) to be used
- Laboratory procedures (e.g., quality assurance, GLP)
- Confirmatory procedures
- Follow-up and treatment regimens

How interventions are defined and what baseline program they are compared with influence both the findings and the usefulness of analysis.

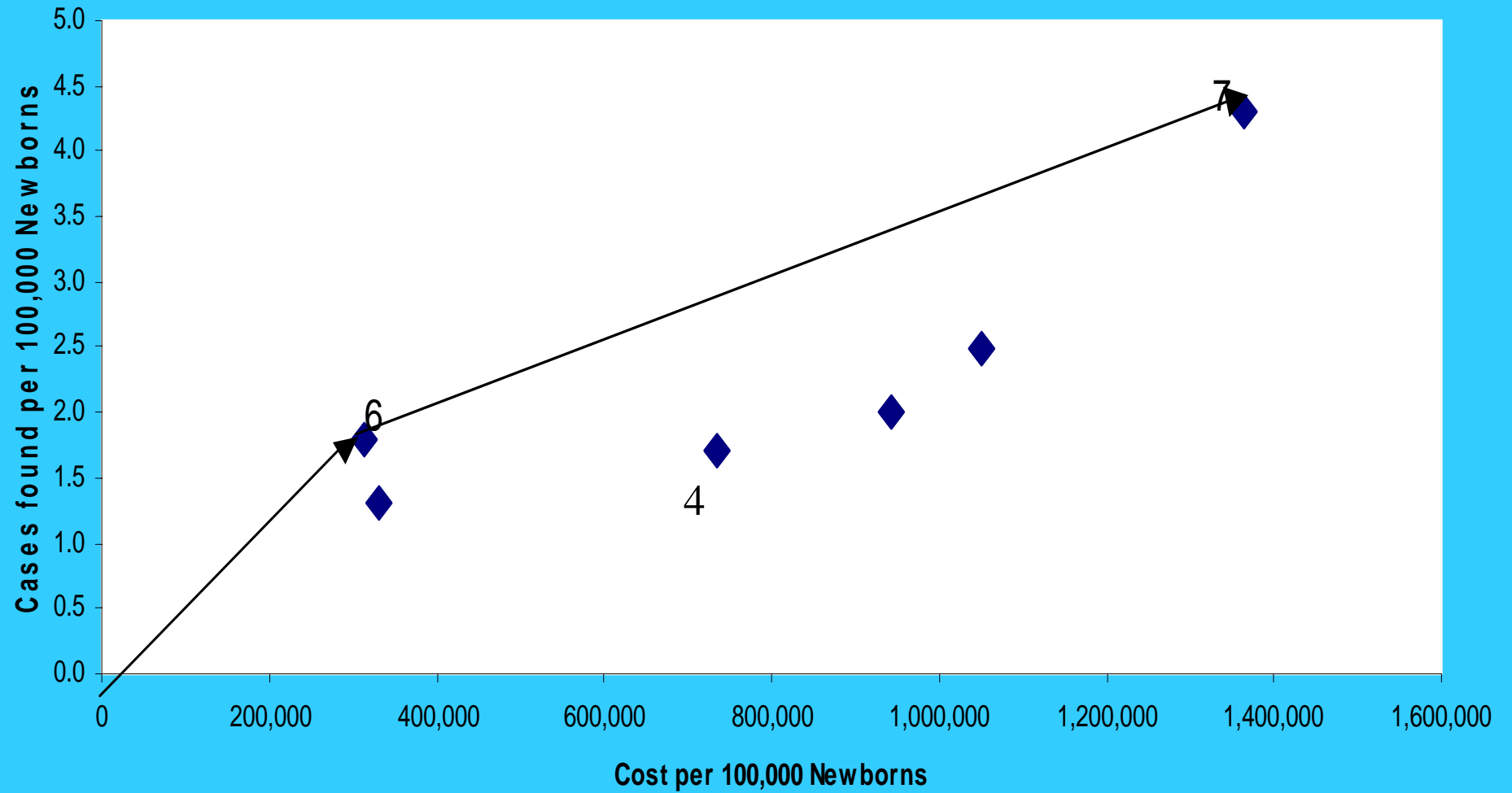
OTA's Strategies



	Net Cost cf Baseline	Extra Cases Found cf Baseline	C/E cf Baseline
Strategy 2	942,000	2.0	471,000
Strategy 3	330,000	1.3	253,845
Strategy 4	735,000	1.7	432,353
Strategy 5	1,052,000	2.5	420,800
Strategy 6	313,000	1.8	173,889
Strategy 7	1,364,000	4.3	317,209

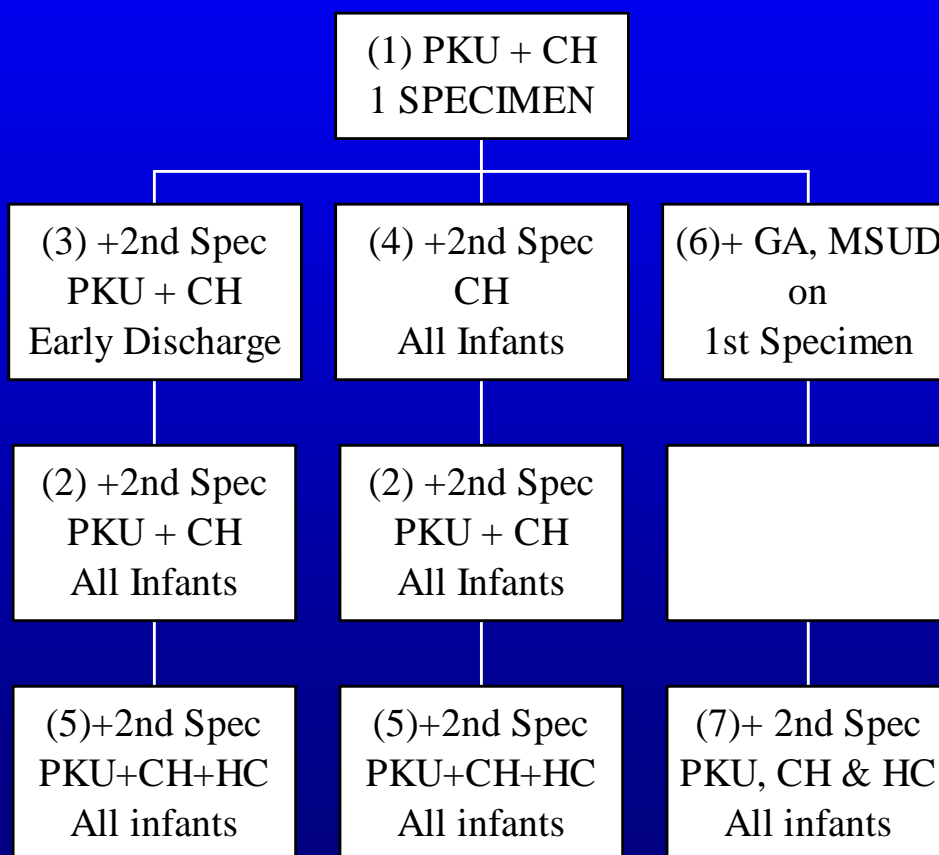
Cf = compared with

Cost-Effectiveness Frontier

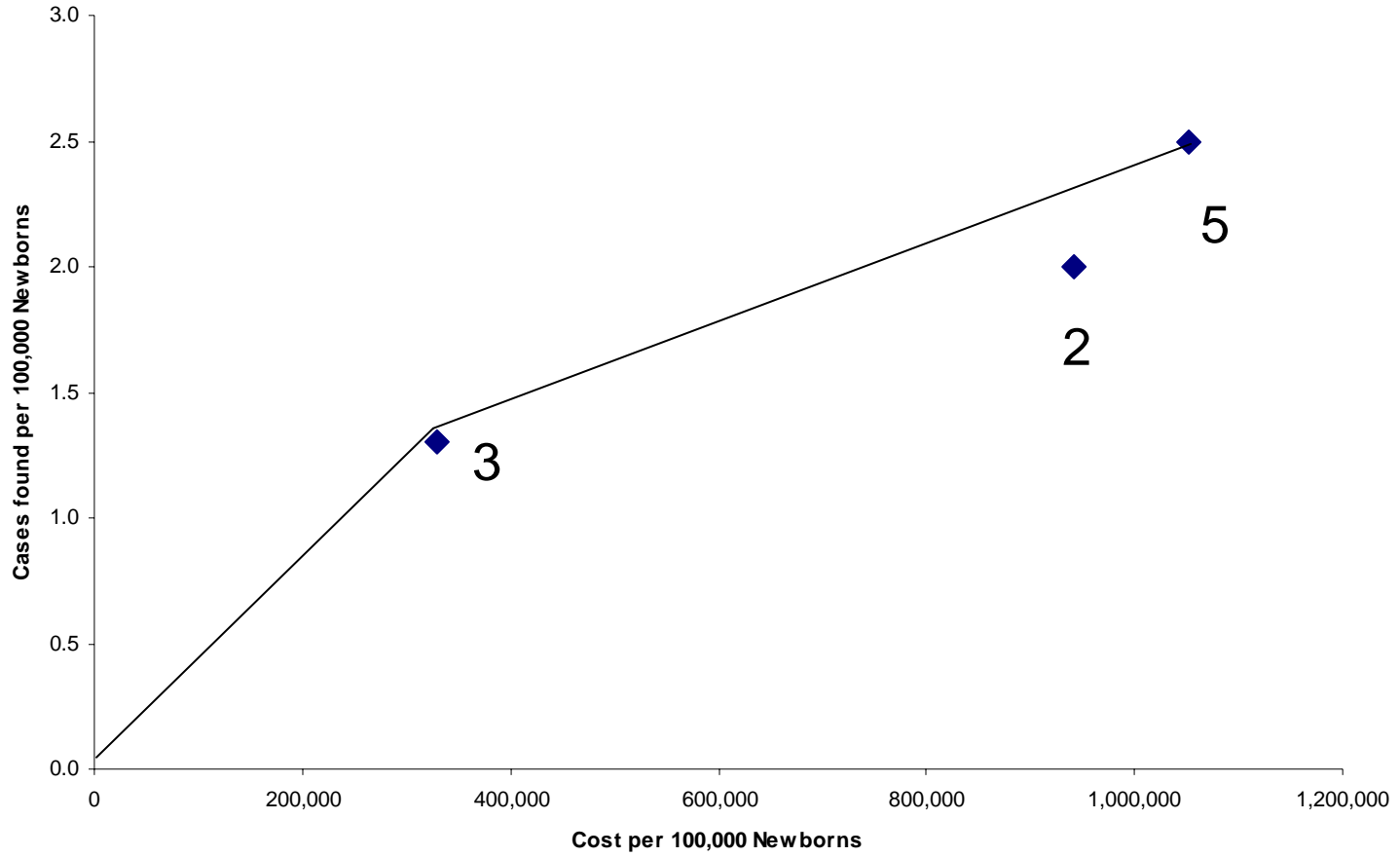


OTA's Incremental Strategies

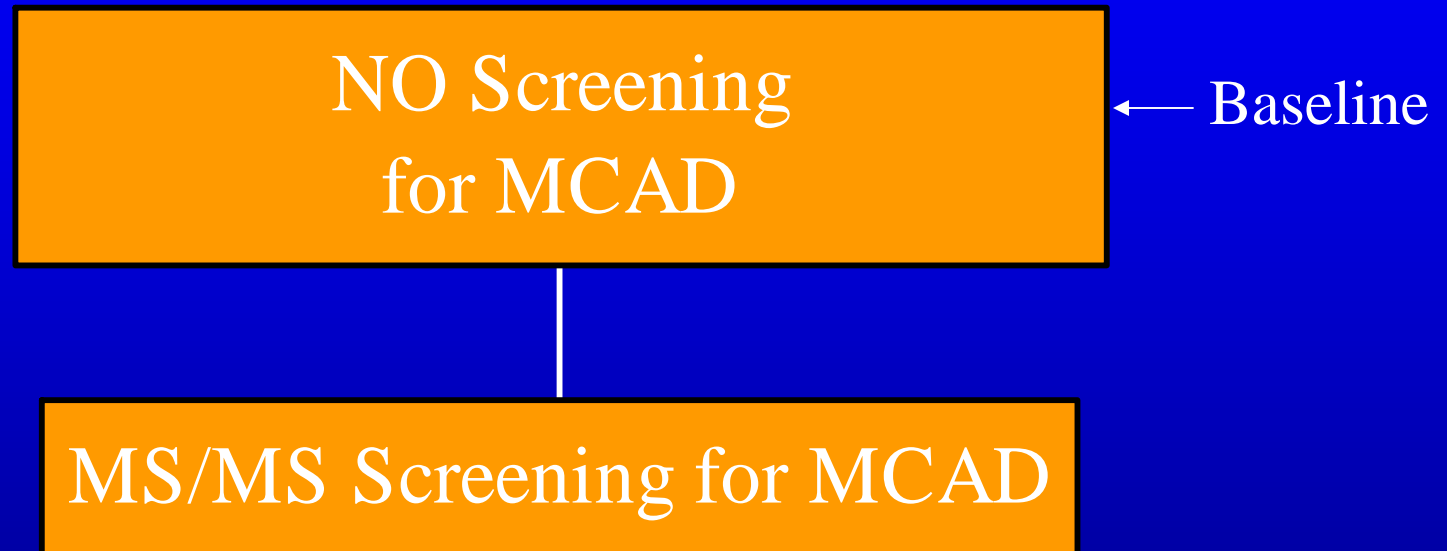
Baseline



Cost-Effectiveness Frontier

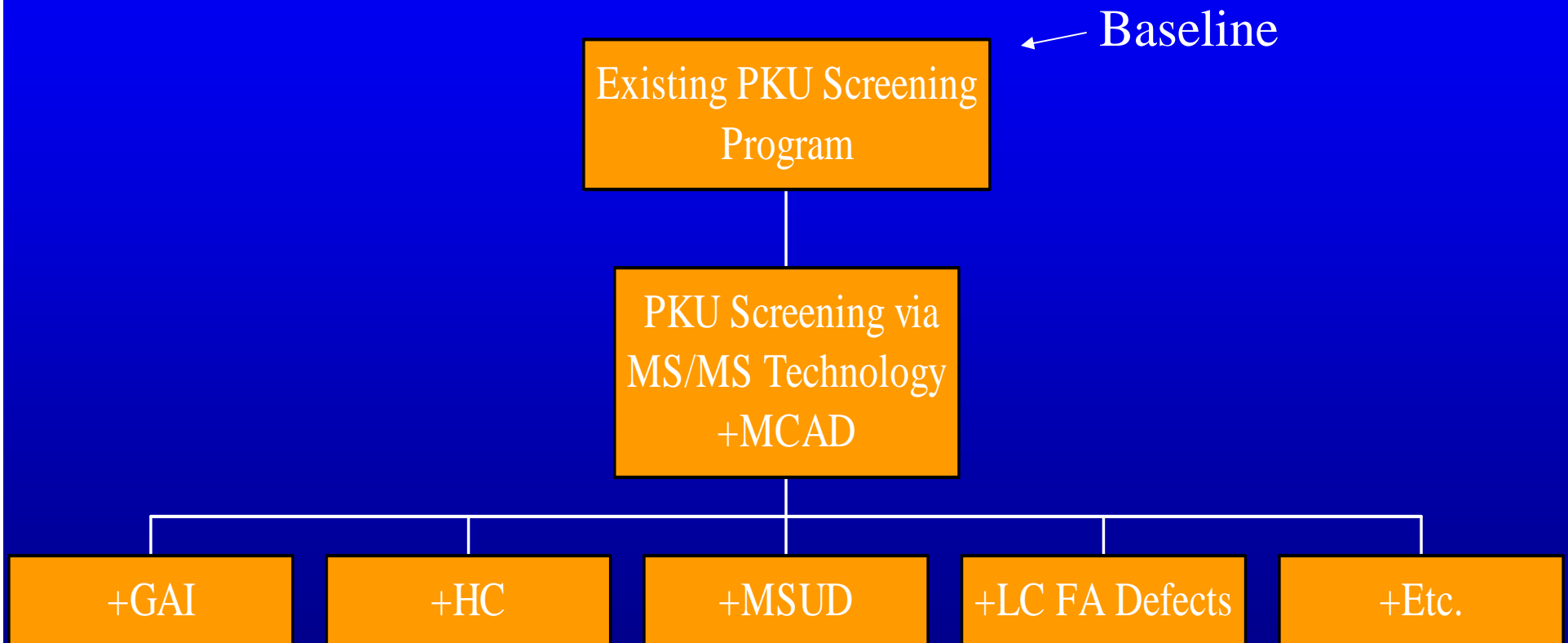


Wisconsin Study



Insigna, et al., J Pediatrics, 2002: 141(4), 524-531

NHS/HTA Study



Source: Pandor, A., et al., Health Technology Assessment, 2004, vol 8, no. 12

Considerations for today's CEAs

- Impact of Private Sector Labs
 - Costs and savings outside the public sector
 - Possible cost saving in capital investment in MS/MS equipment and specialized training of personnel
 - Possible loss of fees to state
 - Supplemental test panel offered for additional fee: equity issues

Current Issues, cont.

- Wider Range of Screening Outcomes
 - Provide treatment to avoid neonatal mortality or severe mental retardation
 - Offer treatment that may reduce morbidity later in life
 - Family planning purposes only
 - Research; no immediate clinical benefit to affected infants or their families

Current Issues, cont.

- Wider range of available tests; need for evaluating outcomes and effectiveness
 - Impact of screening organization:
 - Regional systems
 - Centralizing labs (public/private)
 - Effects of reducing disparities among states: reduced numbers of missed cases
 - Potential role of Federal-state partnerships in financing and guiding implementation of national goals