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# Today's Presentation

- Briefing on reports approved in September
  - *A Comprehensive Review of State Adequacy Studies Since 2003*
  - *Summary School Size Report*
- Recommendations on our methodology for establishing adequacy
- Professional Judgment panels and criteria for panel participants
- Method for selecting successful schools
- Evidence-Based review panels and school case studies
- Q & A



**Report:  
A Comprehensive Review of State  
Adequacy Studies Since 2003**

# Outline of the Study

- Summary of studies
- Description of assumptions and programmatic elements used in the studies
- Identification of best practices
  - To inform the design of future adequacy studies
  - To recommend the study approaches to be used in this Maryland adequacy study

# Challenges in Comparing Adequacy Studies

- Each state's school funding system is unique
  - Relative share of local, state and Federal funds varies
  - Tax systems differ across states
  - Local property tax collection and property assessment methods vary across states
  - Tremendous state variation
    - Enrollment
    - Size of school districts
    - Student characteristics
- Adequacy studies tend to be very “state centric”

# Overview of Adequacy Studies

- Identified 39 studies in 24 states plus DC since 2003
- In addition we included the two Maryland studies from 2001

| Number of Studies Conducted | Number of States |
|-----------------------------|------------------|
| 0                           | 26               |
| 1                           | 14               |
| 2                           | 9                |
| 3                           | 1                |
| 4                           | 1                |

# Who Commissions Adequacy Studies?

- Stakeholder interest groups (14)
- State Legislatures (10)
- Other government agencies or commissions (8)
- State Departments of Education or State Boards of Education (5)
- Plaintiffs in a lawsuit (2)

# Reasons for Adequacy Studies

- Stakeholder initiative (12)
- Government agency initiative (8)
- Recalibration of a previous study or funding formula (7)
- Legislation mandating a study (6)
- Lawsuit or court ruling (6)



# Study Methods or Approaches

- Four generally accepted approaches:
  - Successful Schools/Districts (SSD)
  - Professional Judgment (PJ)
  - Evidence-Based (EB)
  - Cost Function (CF)

# Most Common Approaches

- Professional Judgment
  - Often in combination with SSD
  - SSD sometimes a secondary approach
- Evidence-Based
  - PJ panels to review EB recommendations
- Many states used a combination of approaches
- Most were conducted by APA or Picus Odden

# Implementation of Findings

- Few studies were directly implemented
- Most had substantial impact on subsequent funding level discussions

# Assumptions and Programmatic Elements

- Prototypical schools
- Core teachers
- Elective teachers
- Instructional coaches
- Special education and other intervention staff
- Administration and other school staff
- Funds for purchasing materials, technology and professional development

# Best Practices

- Clear focus on improvement of student performance
- The potential value of case studies in future work
- Importance of state policy makers and local stakeholders in the process
- Combining multiple methods in each study
- Selection of professional judgment panels
- Number of professional judgment panels
- Accurately representing compensation in the analysis



**Report:  
Summary School Size Report**

# School Size Reports

- There will be three School Size Reports
  - First Report: Summary School Size Report
  - Second Report: Preliminary School Size Report
  - Third Report: Final School Size Report
- First Report focuses on:
  - Maryland LEA school size policies
  - Other state's school size policies
  - Initial literature review of the impacts of school size

# School Size Reports

- Second and third reports will:
  - Expand on information discussed today
  - Factors contributing to larger schools
  - Instructional and extracurricular impacts
  - Ideal school sizes
  - Policies and processes for public engagement
  - Models to create small schools in larger settings
  - Costs and impacts of zoning laws
  - Potential impacts on state costs



# Maryland LEA School Size Policies

- Methodology for collecting data
  - Reviewed each LEA Board of Education policy webpage and LEA facilities webpages. Also sought to interview LEA designated facilities planners
    - Have not been able to interview all at this point
- Findings to date
  - Nine LEAs have school size policies
  - None were found to have public input policies on school size though many do provide for public input on education specs for new construction

# Maryland LEA School Size Policies\*

| School Type       | Range of Maximum Sizes | Median |
|-------------------|------------------------|--------|
| Elementary School | 550-750                | 650    |
| Middle School     | 700-1,200              | 900    |
| High School       | 1,200-1,695            | 1,600  |

\*Preliminary findings

# Other States' Policies & Best Practices

- Methodology
  - Review of state education agency, state capital construction, and state legislative webpages
  - Internet search of publications of national organizations that may compile relevant state policy and practice information
- Information Collected
  - School size requirements, classroom size guidelines, square footage guidelines, minimum size guidelines, and Education Facilities Master Plan requirements

# Other States' Policies & Best Practices

| Facility Planning Component        | Number of states that have statute, published guideline, or recommendation |
|------------------------------------|--|
| Classroom Size                     | 29   |
| Site Size                          | 28   |
| Square Foot Per Student            | 22   |
| Educational Facilities Master Plan | 8  |
| School Size                        | 3  |

# Other States' Policies & Best Practices: School Size

| State   | Elementary | Middle  | High      |
|---|------------|---------|-----------|
| Arizona                                       | 500        | 500     | 1,000     |
| Florida – new schools                         | 500        | 700     | 900       |
| Florida – existing schools                    | 820        | 1,139   | 2,180     |
| North Carolina – based on school climate      | 300-400    | 300-600 | 400-800   |
| North Carolina – based on economic efficiency | 450-700    | 600-800 | 800-1,200 |

# Research on Effects of School Size

- Extensive body of research
- General Overview to Topic
  - Operating efficiencies
  - Academic achievement
  - School climate
  - Teacher and student satisfaction
  - Student discipline

# Effects of School Size: Operating Efficiency

- Conventional wisdom
  - economies of scale; larger schools more economically efficient to operate
- Research is not conclusive
  - Operating efficiency is “U” shaped
  - Very small schools do experience greater inefficiencies
  - Larger schools’ efficiency is neutralized by increasing costs of administration and coordination of larger, more complex schools

# Effects of School Size: Academic Achievement

- Research is inconsistent:
  - Little difference in attending smaller or larger schools (Cotton, 1996; Hager, 2006; Ramirez, 1992)
  - Smaller schools more efficient at producing higher levels of student performance (Stiefel, Berne, Iatarola, and Fruchter 2000)
  - Smaller schools have higher achievement, particularly for low-income students (Friedkin & Necochea, 1988; Greenwald, Hedges & Laine, 1996).
  - Larger schools provide performance advantage (Steiner, 2011; Tanner & West, 2011)



# Other Effects of School Size

- Research is more consistent that smaller schools have a positive effect on:
  - School Climate
    - More personal and informal relationships between staff, students and parents
    - More pronounced for low-income and minority students
  - Teacher and Student Satisfaction
    - Cultivate better attitudes and greater educator collaboration
  - Student Discipline
    - Lower incidences of negative social behavior
    - Higher attendance rate
    - Lower dropout rate



# **Proposed Methodology for Establishing Adequacy**

# Proposed Methodology for Determining Adequacy

- Purpose of adequacy study is to establish an adequate per student amount for a base cost figure using multiple methods, and weights for additional resources for students with special needs
- In our proposal we proposed using 3 approaches:
  - Successful Schools
  - Professional Judgment
  - Evidence-Based

# Proposed Methodology for Determining Adequacy

- We did not propose a fourth method, the Cost Function approach, because with only 24 districts, Maryland has too few districts to make an accurate estimate. No proven method exists for using this approach at the school level.

# Proposed Methodology for Determining Adequacy

- Based on our collective experience and the findings from the adequacy study review, we recommend:
  - That the Maryland adequacy study include the following three approaches: 1) Successful school/district ; 2) Professional judgment and 3) Evidence-based
- Taken together, these three approaches serve to compliment and validate the findings of the individual study approaches, providing Maryland with the most accurate and actionable findings available.



# **Professional Judgment Study: Types of Panels and Participants**

# Professional Judgment Approach

- The Professional Judgment approach is one of three adequacy study methods we propose to use in Maryland
- The approach employs multiple panels of practitioner experts to create hypothetical schools and district supports with the resources needed to provide all students the opportunity to meet the state's college and career ready standards.
- The panels are asked to:
  - Develop model or hypothetical elementary, middle and high schools (where appropriate PK-8 and PK-12 schools as well)
  - Central office staffing, materials and equipment related to instructional support, general administration, and operations and maintenance
  - Typically do not address costs of transportation, food service or capital construction

# Professional Judgment Approach

- Once all necessary staffing, materials and equipment are identified, analysts costs out all of the elements to arrive at a per student base cost figure and weights for serving students with special needs
- In states with a wide range of school district sizes, we may cost out schools and central office resources separately for districts of different sizes, for example very small, small, moderate, large, and very large.



# Professional Judgment – Types of Panels

- School Level
- Special Needs
- District Level
- CFO
- Statewide

# Professional Judgment – Participants by Type of Panel

| Participant             | School Level | Special Needs | District Level | CFO | State Wide |
|-------------------------|--------------|---------------|----------------|-----|------------|
| Teachers                | X            | X             | X              |     | X          |
| Principals              | X            | X             | X              |     | X          |
| District Administrators | X            | X             | X              |     | X          |
| Technology Specialists  | X            |               |                |     |            |
| CFO/Business Manager    | X            | X             | X              | X   | X          |

# Panel Participant Qualifications

- Participants should be from districts that are either:
  - (1) successful with all students; or
  - (2) successfully serving specific subpopulations of students, such as Special Education, English Learners or At-Risk students (for Special Needs Panels)
- Participants should be experienced, preferably in more than one district
- Where possible, participants should be recognized for excellence such as Teacher/Principal/Administrator of the year, National Board for Professional Teaching Standards certified, or other such recognition

# Panel Participant Qualifications

- Participants should, in the aggregate, represent all regions of the state



# **Successful Schools Study Approach to School Selection**

# Selecting Successful Schools

- The Successful Schools adequacy approach identifies schools that are currently high performing and assesses how much they spend per pupil
- Theory is that these schools provide a good estimate of the base cost for successfully educating students with no special needs
- Other adequacy approaches are used to determine additional resources needed to effectively educate students with special needs

# Selecting Successful Schools

- We will identify high performing schools for each of the following categories:
  - Meet a specified (absolute) high performance level
  - Produced large performance gains (growth) over a 6 year period
  - Reduced achievement gaps between low-income and more affluent students
  - Produced large performance gains for minority, low-income and/or English learner students
- All schools in Successful Schools study must meet a minimum benchmark for overall (absolute) performance

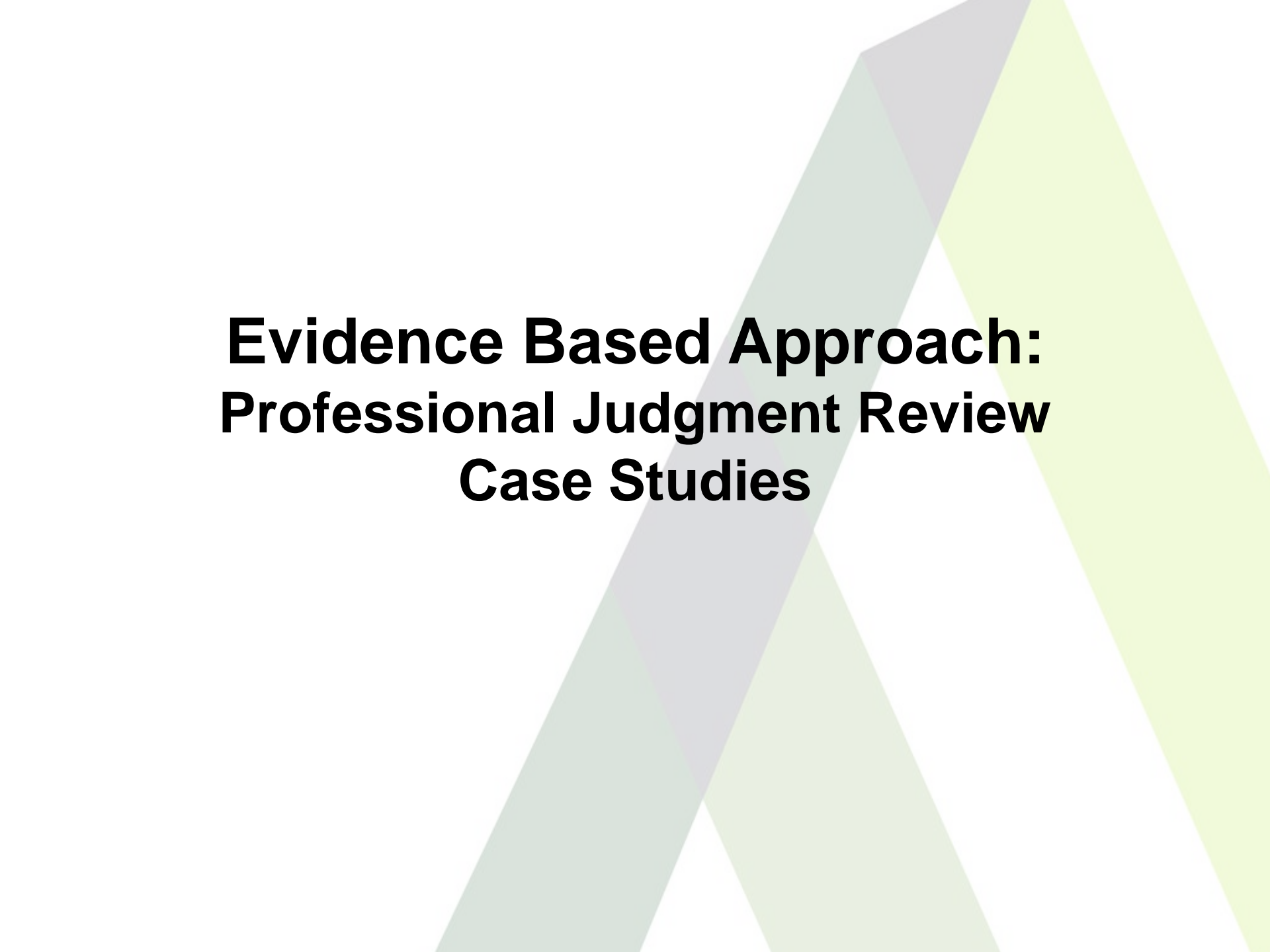
# Selecting Successful Schools

- School selection will be based on MSA and MHSA scores for the period 2005-06 to 2010-11
  - Confirm continuing performance using 2011-12 to 2013-14 and PARCC data when available
- Specific benchmarks will be established based on analysis of school performance data
- Expect overlap between Successful Schools and case study schools
  - Some case study schools may not meet absolute performance criteria of Successful Schools group



# Selecting Successful Schools

- After the initial group of successful schools is selected we will conduct an efficiency screening to exclude spending outliers – those schools spending significantly more or less than the average of the selected schools
- In original 2001 study for the Thornton Commission, we selected 59 schools representing 10 different counties and 46,000 students



**Evidence Based Approach:  
Professional Judgment Review  
Case Studies**

# Three Parts of the EB Approach

- Research based resource allocation formulas
- Professional Judgment panel review
- Case studies of improving schools

# Research Based Resource Allocation Formulas

- Rely on research to define the resource needs of a prototypical school or district (Odden & Picus 2014)
  - Reviews of research on the student achievement effects of educational strategies used in the EB model (random controlled trials are used when possible)
  - Studies of schools and districts that have dramatically improved student performance over a six year period
- 10 point school improvement model

# Components of the EB Model

- Staff
- Dollar per pupil figures
- District-level resources
- Strategies for struggling students
- Rely on research findings to establish formulas for estimating resource costs

# EB Professional Judgment Review

- We will use four professional judgment panels to review the core formulas to ensure relevance to Maryland education programs
  - Panels will consist of educators at all levels of the system, with at least half of each panel consisting of teachers

# Case Studies of Improving Schools

- Purpose of Case Studies
- School Selection
- Interview Protocol & Site Visits

# Purpose of Case Studies

- Inform the Evidence Based (EB) and other adequacy studies
- Compare educational strategies and resource needs of Maryland schools to those in the EB model
  - Adjust the EB model to incorporate Maryland case study findings
- Provide detailed information about cost differentials among schools



# Case Studies – School Selection

- About 12 schools total
  - The goal for this study is 12 schools, pending identification of a sufficient number of schools meeting criteria
- 4 categories of schools – same as Successful Schools study
  - High performing (Absolute)
  - Notable improvements in achievement (Growth)
  - Reduced achievement gap between low-income and more affluent students
  - Improved performance of minority, low-income and/or English learner students
- Identify schools with high, medium and low poverty rates in each category
- No, or lower, minimum absolute performance threshold

# Case Studies – School Selection

- Other potential selection criteria:
  - High performing schools with high concentrations of low-income and/or minority students
- Focus on reading and math scores on MSA and MHSA
  - Percent proficient and advanced
  - Percent advanced if large gains

# Case Studies – School Selection

- Notable improvement means large absolute gains over 6 years, 2005-06 to 2010-11
  - Confirm continuing performance using 2011-12 to 2013-14 and PARCC data when available
- Examples of desired gains:
  - From 35% to 70% proficient and advanced
  - From 55% to 90% proficient and advance
  - From 20% to 40% advanced
  - Notable improvements for low-income and/or minority and/or English learners

# Case Studies – Interview Protocol

- Structured case protocol
- Focus of interviews and case write up:
  - Identify how schools produced improvements
  - Goals, curriculum and instructional approaches, strategies for struggling students, how teachers are organized for instruction, nature of professional development, use of assessments, school culture, use of time
  - Staffing by strategies/programs and similarities/dissimilarities to EB model

# Case Studies – Site Visits

- School site interviews
  - 1-2 day site visit to each school
    - Most interviews will be conducted by Maryland Equity Project at the University of Maryland
  - Interviewees
    - Principal
    - Teachers, focusing on ELA and math
    - Teacher leaders, instructional coaches
    - Special education teachers
  - Individual and small group interviews
  - About 40-50 minutes for each interview session



**Questions?**