CAP Project

# MODULE 5: VIDEO 2 OUTLINE

## SLIDE 1: REPORTING SECTIONS AND EXAMPLES

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## SLIDE 2: REPORTING YOUR COST ANALYSIS RESULTS

- Education decision-makers: Presentation or spreadsheet
- Policy audience: Policy Brief
- Academic audience: Journal article, presentation, or poster
- Funder: Report or presentation

## SLIDE 3: REPORTING SECTIONS

- Abstract or executive summary
- Introduction/ Background
- Methods
- Findings
- Discussion/Conclusion/Recommendations
- Appendix

## SLIDE 4: REPORTING SECTIONS

- Abstract or executive summary
- Introduction/ Background
- Methods
- Findings
- Discussion/Conclusion/Recs
- Appendix
- Screenshot of Checklist for elements to be included in an Economic Evaluation Plan and Report template

## SLIDE 5: REPORTING CHECKLIST

**Study motivation and context**

- The decision or research questions to be informed by the economic evaluation (if part of a larger study, how the evaluation fits with any broader research questions addressed by the study)
- The type of economic evaluation (cost estimation, cost analysis, CFA, CEA, CBA, CUA)
- Whether the economic evaluation is prospective, concurrent, or retrospective
- Whether costs estimated represent total costs vs. business-as-usual, incremental costs, or expenditures only
- The audience for the results
- The perspective(s) taken (e.g., societal, public, private, education agency, participant)
- Prevailing conditions and policies (e.g., locale, population demographics and academic achievement; funding policies and financial status; governance structures; curriculum and other standards; regulatory constraints; length of school year (contracted days) and length of day (hrs); fiscal year beginning/end)

## SLIDE 6: REPORTING CHECKLIST

**Descriptive information about each program being analyzed**

- Name of program, implementing agency, and organizational level of delivery (e.g., district, school, classroom, student)
- Logic model/theory of change, including components for the program being evaluated to illustrate how inputs/resources and activities, including duration, frequency, and time period during which the program is implemented, are expected to lead to intended outcomes for specified recipients
- Whether the program is in a start-up or ongoing/steady-state phase and, if both phases are spanned, which activities are considered start-up versus ongoing
- Scale of implementation

- Types and numbers of participants served (e.g., 300 students or 75 teachers); distribution across sites
- Type and number of study sites (e.g., 25 classrooms, 6 schools, 3 states)
- Locations of study sites and whether urban/suburban/rural
- Whether the intervention is stand-alone, supplementing, replacing, or partially substituting an existing program
- Business-as-usual or other condition experienced by the control group participants, including the typical practice(s) being replaced or supplemented by the program received by the treatment group participants
- Characteristics of the population served (e.g., K-2 ELLs; middle school Special Education teachers)
- Resource categories, incl. key types of staff involved in planning, training, administering, implementing, and supervising the program

## SLIDE 7: REPORTING CHECKLIST

**Study design considerations**

- The time period and specific implementation year(s) for which cost analysis, CEA, and CBA data are collected and reported (time horizon)
- For multiyear programs, the reference year to which costs and benefits are discounted to present value to account for the time value of money; present value formula used
- Discount rate used to obtain present values of costs and benefits
- The scope of cost data collection (i.e., whether the analysis includes costs of any pre-existing program, such as regular school instruction, or focuses on the resources required for the introduction of a new treatment)
- Any sampling strategy used for collecting data from a subset of sites or participants
- The methods used to collect cost data and estimate costs and benefits
- A timeline for data collection (see CAP Project Timeline for Cost Analysis)
- Sources of data on resources and prices used to calculate costs
- Instruments used to collect cost data (e.g., interview protocols, surveys)
- Interest rate used to amortize the costs of durable assets (e.g., facilities, digital devices) and assumed lifetimes of these assets; amortization formula used

- For CEA/CBA: methods used to identify rigorous (causal) outcome impacts to measure effectiveness
- For CBA: sources of price data on the willingness to pay for outcomes used to calculate benefits
- Whether national or local prices are used and for which country and geographic region
- Currency and year in which costs and benefits are expressed in constant currency; exchange rate
- Any applications of specified inflation and/or geographical indices to adjust prices
- The summary metrics and cost breakdowns to be presented
- How cost metrics are aligned/combined with outcome metrics, including whether costs are estimated for the treatment-on-the-treated or intent-to-treat sample
- Sensitivity analyses to be conducted/presented
- *Informed by Crowley et al. (2018), Karoly (2012), Levin et al. (2018), and NASEM (2016).*

## SLIDE 8: REPORTING SECTIONS: ABSTRACT

- Abstract or executive summary
    - Background
    - Purpose of the study
    - Setting and sample
    - Methods
    - Main findings
    - Key conclusions/recs

## SLIDE 9: SCREENSHOT

- Screenshot of the checklist for elements to be included in an economic evaluation plan and report

## SLIDE 10: SCREENSHOT

- Screenshot of the checklist for elements to be included in an economic evaluation plan and report

## SLIDE 11: REACH COST ANALYSIS REPORT

- Screenshot of the Costs and Effects of School-Based Licensed Practical Nurses on Elementary Student Attendance and Chronic Absenteeism
- Screenshot of REACH Cost Analysis Report

## SLIDE 12: ABSTRACT EXAMPLE: SCHOOL-BASED NURSE

- Screenshot of the Costs and Effects of School-Based Licensed Practical Nurses on Elementary Student Attendance and Chronic Absenteeism abstract

## SLIDE 13: ABSTRACT EXAMPLE: SCHOOL-BASED NURSE

- Screenshot of the Costs and Effects of School-Based Licensed Practical Nurses on Elementary Student Attendance and Chronic Absenteeism abstract
- Text highlighted:
    - Despite increasing reliance on licensed practical nurses (LPNs) to provide health services in schools, we do not know whether this is a cost-effective prevention strategy against student absenteeism.

## SLIDE 14: ABSTRACT EXAMPLE: SCHOOL-BASED NURSE

- Screenshot of the Costs and Effects of School-Based Licensed Practical Nurses on Elementary Student Attendance and Chronic Absenteeism abstract
- Text highlighted:
    - we evaluated the cost and effectiveness of an LPN – based school nursing program for improving attendance and chronic absenteeism at a large, urban school district in the southeastern USA.

## SLIDE 15: ABSTRACT EXAMPLE: SCHOOL-BASED NURSE

- Screenshot of the Costs and Effects of School-Based Licensed Practical Nurses on Elementary Student Attendance and Chronic Absenteeism abstract
- Text highlighted:
    - a cost-effectiveness analysis on the matched set, using the ingredients method

## SLIDE 16: ABSTRACT EXAMPLE: SCHOOL-BASED NURSE

- Screenshot of the Costs and Effects of School-Based Licensed Practical Nurses on Elementary Student Attendance and Chronic Absenteeism abstract
- Text highlighted:
    - large, urban school district in the southeastern USA
    - identified a matched set of 46 elementary schools (23 nurse, 23 no-nurse)

## SLIDE 17: ABSTRACT EXAMPLE: SCHOOL-BASED NURSE

- Screenshot of the Costs and Effects of School-Based Licensed Practical Nurses on Elementary Student Attendance and Chronic Absenteeism abstract
- Text highlighted**:**
    - identified a matched set...
    - ...multilevel matching algorithm based on student- and school – level characteristics. We then conducted a cost-effectiveness analysis on the matched set, using the ingredients method to estimate societal costs and multilevel regression to estimate effects.

## SLIDE 18: ABSTRACT EXAMPLE: SCHOOL-BASED NURSE

- Screenshot of the Costs and Effects of School-Based Licensed Practical Nurses on Elementary Student Attendance and Chronic Absenteeism abstract
- Text highlighted:
    - The results indicated that despite substantial incremental costs of $68,228 per school, the presence of a full-time LPN was associated with at best negligible improvements, and at worst slight Dis improvements, in attendance and chronic absenteeism.

## SLIDE 19: ABSTRACT EXAMPLE: SCHOOL-BASED NURSE

- Screenshot of the Costs and Effects of School-Based Licensed Practical Nurses on Elementary Student Attendance and Chronic Absenteeism abstract
- Text highlighted:

- We recommend a careful review of the theory of change for LPN-based school nursing programs to clarify the specific inputs and activities that are expected to lead to improved student outcomes. Education agencies should develop explicit assignment, training, monitoring, and auditing plans to ensure LPNs are equitably distributed and that their activities are aligned with the theory of change. Education agencies should also explore whether expanded Medicaid billing can reduce their share of the nursing cost burden.

### SLIDE 20: ABSTRACT EXAMPLE: REACH

- Screenshot of REACH abstract

### SLIDE 21: ABSTRACT EXAMPLE: REACH

- Screenshot of REACH abstract
- Text highlighted:
  - In this report, we present a cost analysis of Raising Educational Achievement Coalition of Harlem (REACH)
  - REACH entails deep collaboration between schools and program staff in five key areas: Leadership, Teaching and Learning, Expanded Learning Opportunities, Physical and Mental Health, and Family and Community Engagement. The program supports schools in achieving their goals for student learning by utilizing university and community resources, including research from faculty, and graduate student assistants working as interns or volunteers in exchange for hands-on learning experiences.

### SLIDE 22: ABSTRACT EXAMPLE: REACH

- Screenshot of REACH abstract
- Text highlighted:
  - and five high-needs schools in Harlem, New York City

### SLIDE 23: ABSTRACT EXAMPLE: REACH

- Screenshot of REACH abstract
- Text highlighted:
  - we present a cost analysis

- A rigorous cost analysis can help illuminate the resources used to implement its theory of action, in addition to contextualizing the size of measured effects in a broader implementation framework and helping decision-makers select among alternative uses of scarce resources.

### SLIDE 24: ABSTRACT EXAMPLE: REACH

- Screenshot of REACH abstract
- Text highlighted:
  - We used the ingredients method for cost analysis, documenting all resources utilized to operationalize the program's theory of action regardless of whether each resource has a monetary cost or who pays for or provides the resource, in order to fully capture the economic or opportunity cost of the program. We obtained data on ingredients from program documentation, a detailed report on program implementation, and interviews and personal communications with program staff.
  - We supplement this analysis with a case study of the Teachers College Community School and sensitivity analysis.

### SLIDE 25: ABSTRACT EXAMPLE: REACH

- Screenshot of REACH abstract
- Text highlighted:
  - In 2016-17, REACH cost $2,732,960, or $1,560 per student, with substantial variation by school site, domain of REACH, type of ingredient, and source of ingredient and associated funding.

### SLIDE 26: ABSTRACT EXAMPLE: REACH

- Screenshot of REACH abstract
- Text highlighted:
  - While the costs of REACH are substantial, the program itself is comprehensive and wide-reaching; further study should compare the costs of REACH to measured effects in a variety of areas, including student test scores, and behavioral, health, and socioemotional learning outcomes.

## SLIDE 27: REPORTING SECTIONS: INTRODUCTION

- Introduction/ Background
    - Topic for the study
    - Importance of the topic
    - What is known
    - Remaining gaps

## SLIDE 28: SCREENSHOT

- Screenshot of the checklist for elements to be included in an economic evaluation plan and report
- Arrows pointing to:
    - **I for program in general and M for study population.** Scale of implementation
    - **I for program in general and M for study population.** Whether the intervention is stand-alone, supplementing, replacing, or partially substituting an existing program
    - **I for program in general and M for study population.** Characteristics of the population served (e.g., K-2 ELLs; middle school Special Education teachers)

## SLIDE 29: INTRODUCTION EXAMPLE: SCHOOL-BASED NURSE POSTER

- Screenshot of Costs and Effects of School Nursing on Student Attendance and Absenteeism conference poster

## SLIDE 30: REPORTING SECTIONS: METHODS

- Methods
    - Approach to:
      Data collection Estimating costs
    - Analysis
    - Sources of data
      National/local prices
    - Key assumptions and formulas
    - Sensitivity analyses

## SLIDE 31: SCREENSHOT

- Screenshot of the Checklist for Elements to be Included in an Economic Evaluation Plan and Report

## SLIDE 32: REPORTING SECTIONS: METHODS

- Findings
    - Ingredients list and itemized quantities/ costs
    - Cost breakdowns
    - Summary metrics
    - Results of sensitivity analysis

## SLIDE 33: SCREENSHOT

- Screenshot of the Checklist for Elements to be Included in an Economic Evaluation Plan and Report

## SLIDE 34: COST BREAKDOWNS EXAMPLE: REACH

- Screenshot of Table 4 Distribution Of Costs By Ingredients
- Data highlighted:
    - Personnel:
        - OSCP Staff
        - School A: $24,850
        - School B: $24,850
        - School C: $24,850
        - School D: $24,850
        - School E: --
        - Total: $99,380
    - Total:
        - School A: $508,760
        - School B: $747,290
        - School C: $522,830
        - School D: $642,970
        - School E: $311,110
        - Total: $2,732,960

## SLIDE 35: COST BREAKDOWNS EXAMPLE: REACH

- Screenshot of Table 6. Distribution of Costs by Perspective
    - Cost to School:
        - School A: $39,140
        - School B: $55,490
        - School C: $61,140
        - School D: $57,780
        - School E: $0
        - Total: $214,560
    - Cost to TC:
        - School A: $469,620
        - School B: $690,800
        - School C: $461,690
        - School D: $585,190
        - School E: $311,110
        - Total: $2,518,400
    - Total Cost:
        - School A: $508,760
        - School B: $747,290
        - School C: $522,830
        - School D: $642,970
        - School E: $311,110
        - Total: $2,732,960

- Screenshot of Table 7. Distribution of Costs by Funding
    - Total Cost:
        - School A: $463,110
        - School B: $684,760
        - School C: $455,690
        - School D: $569,340
        - School E: $311,110
        - Total: $2,484,000
    - In-kind:
        - School A: $45,650

        - School B: $62,530
        - School C: $67,150
        - School D: $73,630
        - School E: $0
        - Total: $248,960
    - Total Cost:
        - School A: $508,760
        - School B: $747,290
        - School C: $522,830
        - School D: $642,970
        - School E: $311,110
        - Total: $2,732,960

### SLIDE 36: CAP PROJECT TABLE TEMPLATES: COSTS PER SITE TABLE

- Screenshot of Costs per Site Table - Report

### SLIDE 37: CAP PROJECT TABLE TEMPLATES: LO MEAN HI COSTS TABLE

- Screenshot of Lo Mean Hi Costs - Report

### SLIDE 38: FINDINGS: CE PLANE

- Screenshot of Cost Analysis in Practice Project: Cost-Effectiveness Planes 101

### SLIDE 39: FINDINGS: CE PLANE

- Screenshot of Cost Analysis in Practice Project
- Highlight of plane for hypothetical elementary reading programs scatter graph

### SLIDE 40: REMEMBER TO INCLUDE RESULTS OF A REFERENCE CASE ANALYSIS

- Societal perspective
- National average prices
- 3% discount rate (if one is used)
- “We estimated that the nursing program in schools with LPNs cost, on average, $115,707 annually per school in 2018 dollars using national

average prices. This serves as our reference case analysis (CASP, 2021) estimate of the school LPN program." Leach et al. (2022)

### SLIDE 41: REPORTING SECTIONS: DISCUSSION/CONCLUSION

- Discussion/ Conclusion/ Recs highlighting
    - Summary
    - Cost findings/variability
    - Implications of sensitivity analyses
    - Generalizability
    - Comparison with other studies
    - Limitations
    - Recommendations/ Next steps

### SLIDE 42: BOX 2: IDENTIFYING COMPARABLE STUDIES

- Screenshot of Identifying comparable studies to use in a comparative CEA

### SLIDE 43: CASP STANDARDS TEMPLATE

- Screenshot of CASP Standards Rubric: Cost Analysis (CA) 2021

### SLIDE 44: REPORTING SECTIONS: METHODS

- Appendix
    - Information on the required resources/ ingredients
    - Analysis (including de-identified spreadsheets)
    - Data sources
    - Assumptions
    - Data collection instruments

### SLIDE 45: APPENDIX EXAMPLE: REACH

- Screenshot of Technical Appendix template
- Arrow pointing to:
    - Description of Ingredients
    - Table A.1 Summary of Data Sources
    - Other Assumptions
    - Interview Protocol for Principals/Community School Directors

## SLIDE 46: APPENDIX EXAMPLE: SCHOOL NURSE ARTICLE

- Screenshot of Costs and Effects of School-Based Licensed Practical Nurses on Elementary Student Attendance and Chronic Absenteeism
- Arrow pointing to hyperlinks:
    - Supplementary file1 (DOCX 35 KB)
    - Supplementary file1 (XLSX 3044 KB)

## SLIDE 47: COST DATA AND ANALYSIS INFORMATION TO INCLUDE IN REPORTING SPREADSHEETS

- Screenshot of exhibit 2.5 Cost Data and Analysis Information to Include in Reporting Spreadsheet
    - The list of resources required to implement the program
    - The quantity of each resource needed, unit of measure, and source of these data
    - The percentage of each resource used for the program
    - The useful lifetime of durable/nonconsumable resources (e.g., 30 years for buildings, 3 years for computers) and the depreciation formula used
    - The unit price of each resource in the original currency, aggregated only if needed to mask sensitive information; source of price including, where possible, a URL to each publicly available price source
    - The currency in which the results are presented, year(s), the geographical location to which the prices are relevant, and any currency exchange rate used

## SLIDE 48: REPORTING SECTIONS

- Abstract/ Executive summary
    - Background
    - Purpose of the study
    - Setting and sample
    - Methods
    - Main findings
    - Key conclusions/ recs
- Introduction/ Background

    - Topic for the study
    - Importance of the topic
    - What is known
    - Remaining gaps
- Methods
    - Approach to:
      Data collection Estimating costs
    - Analysis
    - Sources of data
      National/local prices
    - Key assumptions and formulas
    - Sensitivity analyses
- Findings
    - Ingredients list and itemized quantities/costs
    - Cost breakdowns
    - Summary metrics
    - Results of sensitivity analysis
- Discussion/ Conclusion/ Recs
    - Summary
    - Cost findings/ variability
    - Implications of sensitivity analyses
    - Generalizability
    - Comparison with other studies
    - Limitations
    - Recommendations /Next steps
- Appendix
    - Information on the required resources/ ingredients
    - Analysis (including de-identified spreadsheets)
    - Data sources
    - Assumptions
    - Data collection instruments