Cost Analysis of Adolescent Transition Program

Anne Jackson
and
Lindsay Beckman
Overview of Adolescent Transition Program (ATP)

- Objective: to Reduce Problem Behavior in Adolescents through Intervention
- Three Portland Middle Schools
- 672 Participants:
  - 341 in Control Group
  - 331 in Treatment Group
- 4 waves (6th – 9th grade)
- Family Resource Center (FRC)
- Family Check-up Program
- Family Intervention Program
Our Analysis Objectives

- Calculating Costs of Intervention
- Calculating Effectiveness
- Cost-Effectiveness Analysis
- Cost-Benefit Analysis
Calculating Costs of ATP

- Separate Implementation Costs from Research and Development
- Explicit Costs
  - Start-up Costs
  - Costs Per Year
- Implicit Costs
Table of Costs

Explicit Costs

– Start-up Costs:
  • Family Resource Center: $5,850
  • Teacher Incentives: $8,150

– Costs Per Year:
  • Services and Supplies: $8,949
  • Travel: $2,212
  • Salaries: $96,359
  • OPE/Benefits: $39,747

Implicit Costs

• Parent Time
• Donated Family Resource Center
Total Costs

- **Total Costs Per Year**
  - First Year (Including Start-up Cost): $162,267
  - Cost for each additional year: $147,267

- **Total Program Cost (Four Waves)**: $604,068

- **Cost Per Student, Per Year**
  - First Year (Including Start-up Cost): $495
  - Cost for each additional year: $452
  - Total Cost Per Student(Four Waves) $1,851
Regression and Expectations

- **Dependent Variable**
  - Drugl = Log of Substance Use Per Month (cigarettes, alcohol, and marijuana)

- **Independent Variables**
  - Wave = Time (Year/Program Wave)
    » Expected Positive Correlation
  - Treatmnt = Binary Variable of Treatment/Control Group
    » Expected Correlation of 0
  - Trewave = Interaction Variable of Treatment and Wave
    » Expected Negative Correlation
Regression Results

Regression of drug1

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Substance Use for Control and Treatment Group Over Time

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Effectiveness Results

- 2.28 Units of Substance Use Reduction Per Student, Per Month (after wave four)

- 27.36 Units of Substance Use Reduction Per Student, Per Year (after wave four)

- 34.08 Units of Substance Use Reduction Per Student Over Entire Program (four waves)

- 53% Reduction in Substance Use Per Month
Cost-Effectiveness Analysis

- Three Assumptions for Calculating Cost-Effectiveness of ATP
  - Assumption One: Conservative
  - Assumption Two: Moderate
  - Assumption Three: Generous
Assumption One: Conservative

- Assumes ATP Effectiveness is Transitory
  - Level and Rate of Change of Substance Use Revert Back to Non-Treatment Values.
- Total Reduction in Substance Use: 34.08 units.
- Cost per substance unit reduced: $54.28
Assumption Two: Moderate

- Assumes the Level of Substance Use Remains at a Constant Difference and Rate of Change of Substance Use is Transitory.
- Total Reduction in Substance Use: 1,676 units.
- Cost per substance unit reduced: $1.10
Assumption Three: Generous

- Assumes the Rate of Change of Substance Use in the Control and Treatment Group Remains Different for a Four Year Period Followed by a Constant Difference for a 56 Year Period in the Level of Substance Use.

- Total Reduction in Substance Use: 7,090 units.

- Cost per substance unit reduced: $0.26
Cost-Benefit Methodology

- According to Gruber and Koszegi’s study, one pack of cigarettes costs $30.44 in terms of lost life expectancy.
- Assuming 50% of the Substance Use Reduction is Cigarette Use.
- Examining Benefits Over 60 Years Period
- Three Assumptions for Calculating Benefits
  - Conservative, Moderate, and Generous
Cost-Benefit Analysis

- **Assumption One: Conservative**
  - Total Reduction in Substance Use: 34.08 units.
  - Total Benefit per student: $26

- **Assumption Two: Moderate**
  - Total Reduction in Substance Use: 1,676 units.
  - Total Benefit per student: $1,275

- **Assumption Three: Generous**
  - Total Reduction in Substance Use: 7,090 units.
  - Total Benefit per student: $5,395
Cost-Benefit Analysis

- We used the Moderate Assumption with Benefit of $1,275.44
- Compared to Total Cost of Student for Four Waves: $1,851
- Benefits < Costs
- Benefits do not include other 50% of Substance Use Reduction.
Reduction of Costs

- Therapy Time Per Treatment Student, Per Year:
  - 24.76 Minutes
- Ample Therapy Time for More Students Per Therapist
- Lowers the Program Costs Per Student
- Cost-Effectiveness Improves: Reduction Results Would Cost Less Per Student
Program Implementation and Conclusions

- Clear Understanding of Costs and Benefits Involved in the Intervention Program.

- Implementation Based on Risk Level of Students

- Importance of Preventing Substance Use at an Early Age
Further Research

- Further Understanding of Future Benefits
- Risk Level: Cost and Implementation Decisions Based on Demographics of Schools
- Full Data for Parent Income and Education Variables
- Survey Questions on Willingness to Pay for Program Benefits