

Presentation for the IOM Committee on the Prevention of  
Mental Disorders and Substance Abuse, October 31<sup>st</sup>, 2007

**Economic and Policy Issues in  
Preventing Mental Disorders  
and Substance Abuse among  
Young People**

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# Background

- Intuitively, prevention is a great investment
- Yet funding is relatively low and uncoordinated
- How should we be investing in prevention?
  - How much and in what ways?

# How to Identify Good Investments?

1. Identify risk and protective factors
2. Determine which factors can be addressed through intervention
3. Design intervention
4. Demonstrate effectiveness of intervention
5. Demonstrate cost-effectiveness of intervention

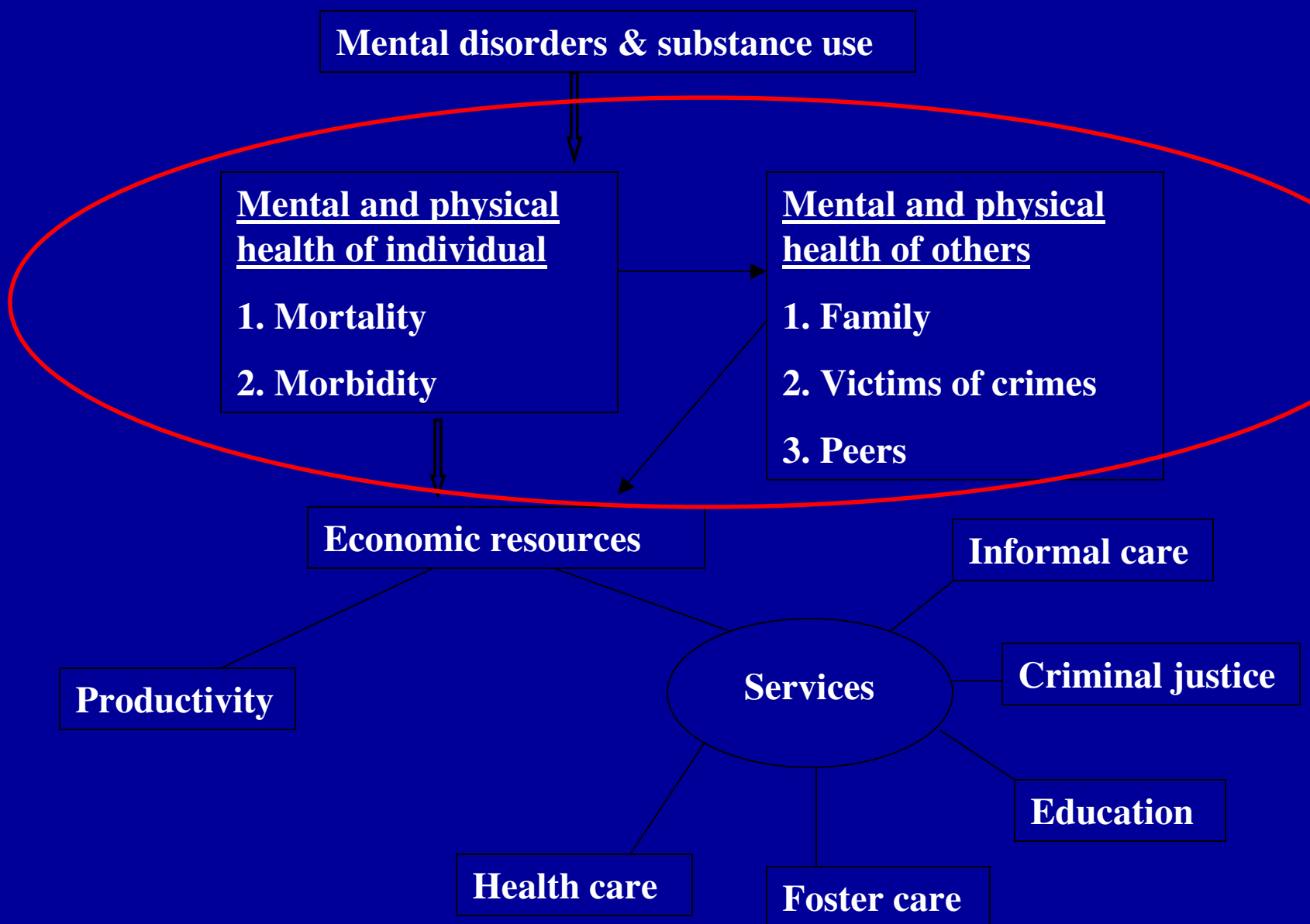
# Cost-effectiveness Analysis

- Determines how to maximize an objective (e.g., health) with limited resources
- Caveats
  - Addresses efficiency, not equity
  - Many interventions may be cost-effective from a societal perspective, but not from an organization's perspective

# Objectives Of Our Review

1. Quantify the **potential benefits** from prevention.
2. Quantify the **actual costs and benefits** (i.e., the cost-effectiveness) of existing interventions.
3. Describe and analyze **current public policy**, particularly funding sources, most relevant to the economics of prevention.

# **1. Potential Benefits of Prevention**



# Health Consequences

- Mental disorders and substance abuse account for **30% of the burden of disease**, in terms of disability-adjusted life-years (DALYs) lost, for people ages 0-24 in the U.S.
- This figure reaches 48% among ages 15-24

Michaud, C. M., et al. (2006). The burden of disease and injury in the United States 1996. *Population Health Metrics*, 4, 11.

**Mental disorders & substance use**

**Mental and physical health of individual**

- 1. Mortality**
- 2. Morbidity**

**Mental and physical health of others**

- 1. Family**
- 2. Victims of crimes**
- 3. Peers**

**Economic resources**

**Informal care**

**Productivity**

**Services**

**Criminal justice**

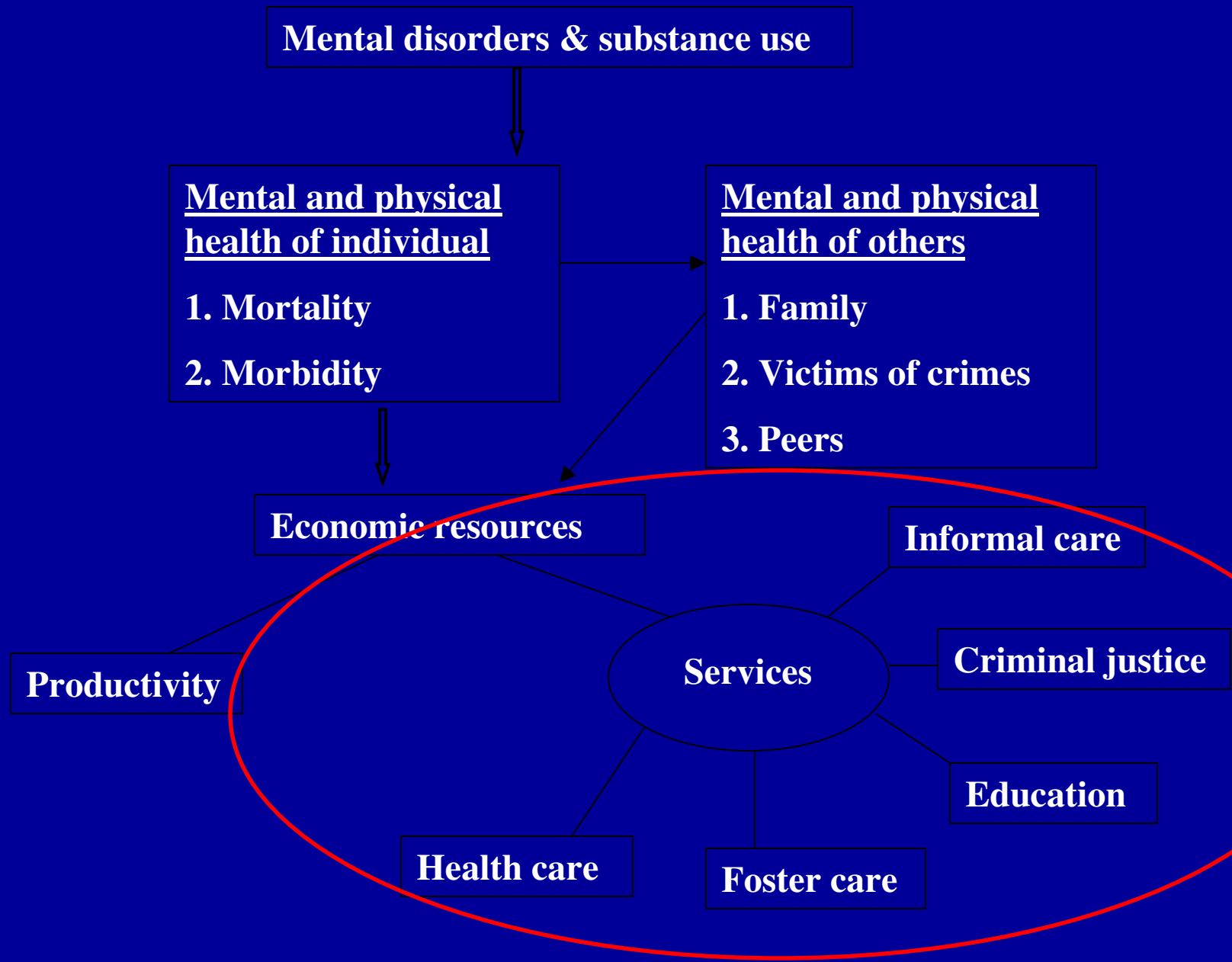
**Education**

**Health care**

**Foster care**

# Productivity Losses

- Impairment to investments in education => **Reduced human capital in adulthood** => Reduced productivity in adulthood
- Reduced health => **Reduced health in adulthood** => Reduced productivity in adulthood
- **Interference with productivity of others** (especially family members)



# Service Utilization

- Mental health care
  - \$11.7 billion, or \$172 per child ages 0-17 (**\$293 per adolescent** ages 12-17) (Ringel and Sturm, 2001)
- Full range of services (special education, residential treatment, juvenile justice, etc):
  - **\$894 per adolescent** ages 13-16 in western North Carolina (Costello et al, 2007)

Ringel, J. S., & Sturm, R. (2001). National estimates of mental health utilization and expenditures for children in 1998. *The Journal of Behavioral Health Services & Research*, 28(3), 319-333.

Costello, E. J., Copeland, W., Cowell, A., & Keeler, G. (2007). Service costs of caring for adolescents with mental illness in a rural community, 1993-2000. *The American Journal of Psychiatry*, 164(1), 36-42.

# Estimate of Total Costs

- \$190 billion, or **\$1,800 per young person**
  - (per year as of 2007, for ages 0-24)
- Estimate based on conservative assumptions:
  - Service costs are twice the mental health care costs estimated by Ringel & Sturm (2001)
  - Young people account for 35.5% of total health and productivity costs, which were estimated by Rice et al (1991). The 35.5% figure is the share of DALYs lost accounted for by the 0-24 age group in the U.S.

# Summary of Knowledge on Costs

- Costs are very large => Potential gains from prevention are very large
- Qualifications:
  - It is unclear what proportion of these costs are preventable, given current knowledge
  - Many sub-clinical symptoms entail substantial costs, some of which could be prevented
  - There is a lot of uncertainty in our assumptions about long-term consequences

## **2. Cost-effectiveness of Prevention**

# Categories of Interventions

- Specific to mental disorders
- Specific to substance use
- Broad, early childhood
- Broad, later childhood

# Specific to Mental Disorders

- Few economic analyses
  - Lynch et al: group cognitive behavioral program is highly cost-effective in preventing depression
  - Foster et al: Fast Track intervention is 70% likely to be cost-effective for preventing conduct disorder (for higher risk children only)
- Many effective programs may also be cost-effective, but still await economic analysis

Lynch, F. L., Hornbrook, M., Clarke, G. N., Perrin, N., Polen, M. R., O'Connor, E., et al. (2005). Cost-effectiveness of an Intervention to Prevent Depression in At-Risk Teens. *Archives of General Psychiatry*, 62(11), 1241-1248.

Foster, E. M., Jones, D., & Conduct Problems Prevention Research Group. (2006). Can a Costly Intervention Be Cost-effective?: An Analysis of Violence Prevention. *Archives of General Psychiatry*, 63(11), 1284.

# Specific to Substance Use

- 10 of 12 substance use prevention programs reviewed were found to be cost-effective (Aos et al, 2004)
- Benefits were generally small (<\$1,000) but costs were even smaller (<\$200)
- Policy interventions (e.g. anti-smoking media campaigns) may also be cost-effective, but most still require economic analysis

Aos, S., Lieb, R., Mayfiel, J., Miller, M., & Pennucci, A. (2004). Benefits and Costs of Prevention and Early Intervention Programs for Youth No. 04-07-3901). Olympia, WA: Washington State Institute for Public Policy.

# Broader Interventions, Early Childhood

- Home visitation programs
  - Meta-analysis: Benefits = \$11,000, Costs = \$5,000
  - **Nurse-Family Partnership**: B = \$41,000, C = \$7,000 (high risk sample)
- Center-based programs
  - **Perry Preschool Project**: B = \$240,000, C = \$15,000
  - **Abecadarian Project**: B = \$158,000, C = \$63,000
  - **Child-Parent Centers** (Chicago): B = \$75,000, C = \$7,400
  - **Head Start**: likely to be cost-effective

See Section 3 of our paper for references corresponding to these estimates.

# Broader Interventions, School-aged Children

- **Youth development programs:** several are highly cost-effective, with benefit-cost ratios ranging from 3 to 28 (Aos et al, 2004)
  - E.g., Seattle Social Development Project
- **Juvenile justice programs:** similarly, several are highly cost-effective (Aos et al, 2004)
  - E.g., Multi-systemic therapy (MST)

Aos, S., Lieb, R., Mayfiel, J., Miller, M., & Pennucci, A. (2004). Benefits and Costs of Prevention and Early Intervention Programs for Youth No. 04-07-3901). Olympia, WA: Washington State Institute for Public Policy.

# Summary of Knowledge on Cost-effectiveness

- Limited direct evidence for mental disorders
- More evidence for substance use
- Very promising indirect evidence for both

# Recommendations

1. Conduct **more economic analyses**
2. Improve **understanding of long-term effects**
  - More use of administrative data?
3. Track **broad set of outcomes**
  - Full range of service utilization
  - Mental health and substance use measures in evaluations of broad interventions

# Recommendations (cont'd)

4. Consider more explicitly the **dynamic complementarities** across interventions
5. Improve understanding of **causal** links between aspects of poverty and mental health

### **3. Policy issues relevant to the economics of prevention**

# Policy Issues & the Economics of Prevention

- Current state of funding
- Current issues in funding
- Current policy proposals
- Schools as a primary venue for delivery of preventive services

# How Much Do We Currently Invest in Prevention?

- Multiple sources of preventive services
- Funding of prevention, treatment, and research is often bundled
- Prevention may be narrowly or broadly defined
  - Federal investment
  - Average school investment
  - Minimum insurance coverage

***FEDERAL AGENCIES/PROGRAMS***

Individuals with Disabilities Education Act  
Safe and Drug Free Schools  
SAMHSA Grants  
Improving Academic Achievement of the Disadvantaged

***STATE FUNDS***

Special Education Funds  
General Funds  
State Universal Coverage Programs  
State Mental Health Programs (CA, IL)

***LOCAL FUNDS***

General Funds  
School District Funds

***PRIVATE FOUNDATIONS***

Pew Charitable Trusts  
Robert Wood Johnson Foundation  
Many Corporate Foundations

***HEALTH INSURERS***

Medicaid  
Managed Care Organizations  
Blue Cross/ Blue Shield

***SELF PAY/CHARITY***

Individual Families  
Neighborhood Centers  
Community/Volunteer Initiatives

# Examples of Funding Levels

- SAMHSA Strategic Prevention Frameworks: **\$230 million** over 5 years to 21 states (**\$93 million** in 2006)
- Safe and Drug Free Schools funded **~\$510 million** towards prevention (2006)
- CA Mental Health Services Act: **\$76.5 million** currently dedicated to state-led preventive efforts

# Current Issues in Funding of Prevention

- Level of investment difficult to determine, especially given the contribution of local agencies and foundations
- Grant model can lead to inadequate or interrupted funding
- Competition between prevention, treatment, and research

# Current Policy Proposals

- Limited amount of political and public support for preventive programs (Ripple & Zigler, 2003)
- New Freedom Commission (2003) supports early mental health screening
- In committee examples:
  - HeLP America Act (Sen. Harkin, 2007)
  - Parental Consent Act (Rep. Paul, 2007)

Ripple, C. H., & Zigler, E. (2003). Research, Policy, and the Federal Role in Prevention Initiatives for Children. *The American Psychologist*, 58(6-7), 482-490.

# Stakeholders in Delivery of Preventive Interventions

- Pre-schools, schools, health care providers, health insurers, Medicaid/SCHIP, media, federal agencies
  - Current organization & financing may or may not encourage implementation of cost-effective preventive interventions
  - Many stakeholders will not re-coup the cost-savings from preventive interventions

# Preventive Interventions in Schools: Opportunities and Challenges

- 50 million (90% of all enrolled children) attend public school in the U.S. (U.S. Dept of Ed, 2007)
- Significant amount of federal funds which support prevention are funneled through schools
- Schools are primary provider of mental health services for most children (Burns et al, 1995)

U.S. Department of Education. (2007). *National Center for Education Statistics: Participation in Education*. Retrieved October 4, 2007, from <http://nces.ed.gov/programs/coe/2007/section1/index.asp>.

Burns, B. J., Costello, E. J., Angold, A., Tweed, D., Stangl, D., Farmer, E. M., et al. (1995). Children's mental health service use across service sectors. *Health Affairs*, 14(3), 147-159.

# Preventive Interventions in Schools: Opportunities and Challenges

- Only 55% of schools have formal arrangements with community mental health providers (Foster et al, 2005)
- Current initiatives (i.e. IDEA) are under-funded (Pumariega & Vance, 1999)
- Current funding results in systems with inadequate resources which adversely affect poor & minority students

Foster, E. M., Dodge, K. A., & Jones, D. (2003). Issues in the Economic Evaluation of Prevention Programs. *Applied Developmental Science, 7*(2), 76-86.

Pumariega, A. J., & Vance, H. R. (1999). School-Based Mental Health Services: The Foundation for Systems of Care for Children's Mental Health. *Psychology in the Schools, 36*(5), 371-78.

# Next Steps for Economic Policy of Prevention

- Assess Current Funding of Prevention
- Require cost-effective analysis for all federally funded evaluation efforts
- Coordinate planning and implementation of prevention initiatives across various sectors/levels of government
- Provide incentives for various stakeholders to deliver preventive interventions based on evidence (NREPP)

# Overall Summary

- Preventive efforts hold vast potential to improve health and increase economic resources
- Limited direct evidence on cost-effectiveness of preventing mental disorders
- More evidence for substance use
- Very promising indirect evidence for both
- Funding remains modest and uncoordinated

# Synthesis of Recommendations

- More attention to economic analysis
  - Increased number of studies
  - Use knowledge to inform policy priorities
- Increased coordination
  - Networks of settings to facilitate diffusion of evidence-based programs
  - Integration of financial incentives
  - Integration of data systems across settings

# Conclusion:

## How Should We Invest In Prevention?

- Case for increased investment in research seems clear
- Investment in existing interventions?
  - Potential gains are very large, despite uncertainties
  - Knowledge from natural experiments will help resolve uncertainties
  - Society's strong valuation of the health of children and adolescents may not always be reflected in resource allocations