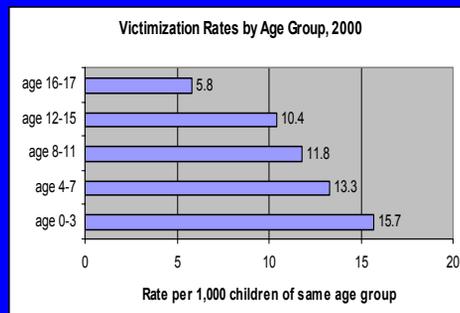
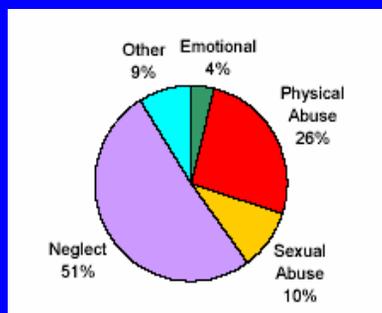
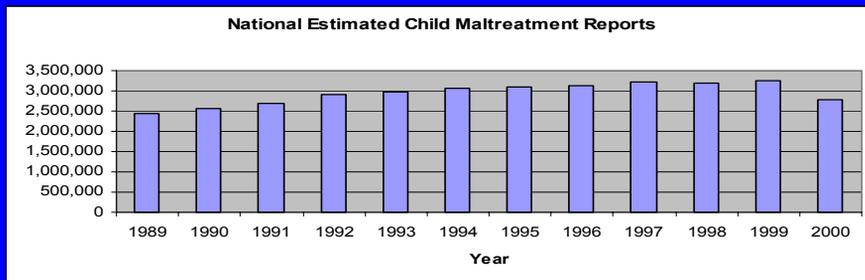


# The Costs and Consequences of Child Maltreatment

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AAAS Feb. 2004

## Incidence and Types of Child Maltreatment



## Public Health Consequences of Child Maltreatment

- Major Mental Health Problems
- Substance Abuse
- AIDS and Sexually Transmitted Diseases (STDs)
- Impaired Physical Health

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## A History of Childhood Maltreatment Increases Risk for Major Depression

- Maltreatment increases risk for major depression – Increased Odds Ratio 4.6 to 8.1
- Maltreatment increases risk for suicide – Increased Odds Ratio 11.8 to 12.2
- Maltreatment associated with poor response to antidepressant medication and poor overall outcomes
- Depression becoming the 2<sup>nd</sup> most costly illness according to the World Health Organization

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## A History of Child Maltreatment is Strongly Linked to Drug and Alcohol Abuse

- Maltreatment significantly increases the risk for alcohol and drug abuse in adolescents
- Maltreatment is the best predictor of drug and alcohol abuse in women
- Maltreatment associated with poor treatment outcomes and increased treatment drop out

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## A History of Child Maltreatment is Strongly Associated with HIV & STD Risk

- A history of child maltreatment dramatically increases risks for HIV-risk behavior (IV drugs, promiscuity)
  - Hx of abuse associated with difficulties in practicing safe sex precautions
  - Hx of abuse associated with poor compliance with HIV treatment
  - Hx of abuse is associated with knowingly transmitting HIV by men
- Findings well-replicated in large, community studies – strong implications for AIDS prevention

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## Impairment of Physical Health: The Adverse Childhood Experiences (ACE) Studies

- ACE questionnaire administered with medical examination to large (N~10,000) samples (Kaiser Permanente & Centers for Disease Control )
- Series of studies find a graded (dose-effect) response between number of ACEs and medical and mental health problems
- Age cohort comparisons indicate that this dose-response effect remains unchanged since 1900 – despite the dramatic advancements in health care.

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## ACE Examples

- The 7 ACEs – (psychological, sexual & physical abuse, parental mental illness, substance abuse, domestic violence & criminal behavior)
- Subjects with 4 or more ACEs (compared to 0 ACEs) have significantly increased health risk factors (smoking, obesity, inactivity, depression, substance abuse)
- Subjects with 4 or more ACEs have significantly higher rates of the leading causes of death (heart disease, cancer, stroke, lung disease, diabetes)

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## 2001 Estimated Direct Costs of Child Maltreatment = \$24 Billion\*

- Medical care (ED visits, hospitalization & treatment)
- Mental Health (evaluation, individual and family treatment)
- Child Protective Service investigation
- Foster care (80% of foster placements are for maltreatment)
- Law enforcement costs
- Prosecution and incarceration costs

\*Fromm, 2001, Prevent Child Abuse America

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## 2001 Estimated Indirect Costs of Maltreatment = \$69 Billion\*

- Special Education (50% of maltreated children have school problems)
- Ongoing Mental Health (depression, suicidality, PTSD)
- Juvenile Delinquency & Adult Criminality
- Adult Medical Problems
- Substance Abuse
- AIDS and sexually transmitted diseases
- Increased unemployment and lost productivity

\*Fromm, 2001, Prevent Child Abuse America

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## Prevention Works and is Cost Effective!

- Meta-analysis of 21 studies found that Home Visitation programs significantly reduce child maltreatment (median reduction = 40%, range 24%-74%) (Centers for Disease Control)
- Programs utilizing nurses and lasting 2 or more years are most effective
- Economic analysis found that 4 dollars are saved for every dollar invested in a Home Visitation prevention program (RAND Corp)

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## Conclusions

- Child maltreatment makes significant contributions to costly public health problems (depression, AIDS, substance abuse, physical health)
- A history of maltreatment is associated with poor response to standard treatments
- Maltreatment prevention programs work and can be improved with further research
- Prevention is cost-effective

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# **The Costs and Consequences of Child Maltreatment - Supporting References -**

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## **Slide 1: Title**

## **Slide 2: Incidence and Types of Child Maltreatment**

- Incidence data from Child Maltreatment 2000: Reports from the States to the National Child Abuse and Neglect Data System. U.S. Dept of Health and Human Services, Administration on Children, Youth and Families (2002), Child Maltreatment 2000, Washington, DC; U.S. Government Printing Office.

## **Slide 3: Public Health Consequences of Child Maltreatment**

- See supporting references below

## **Slide 4: A History of Child Maltreatment Increases Risk for Major Depression**

- Recent studies documenting that child maltreatment significantly raises the risk for major depression
  - Dinwiddie, S., C. Heath, M. Dunne, K. Bucholz, P. Madden, W. Slutske, L. Bierut, D. Statham and N. Martin (2000). "Early sexual abuse and lifetime psychopathology: A co-twin-control study." Psychological Medicine **30**: 41-52.
  - Fergusson, D., L. Horwood and M. Lynskey (1996). "Childhood sexual abuse and psychiatric disorder in young adulthood: II. Psychiatric outcomes of childhood sexual abuse." Journal of the American Academy of Child and Adolescent Psychiatry **34**: 1365-1374.
  - Nelson, E., C. Heath, P. Madden, M. Copper and S. Dinwiddie (2002). "Association between self-reports of childhood sexual abuse and adverse psychosocial outcomes: results from a twin study." Archives of General Psychiatry **59**: 139-145.
  - Paolucci, E., M. Genuis and C. Violato (2001). "A meta-analysis of the published research on the effects of child sexual abuse." Journal of Psychology **135**: 17-36.
- Recent studies documenting that child maltreatment significantly raises the risk for suicide
  - Fergusson, D., L. Horwood and M. Lynskey (1996). "Childhood sexual abuse and psychiatric disorder in young adulthood: II. Psychiatric outcomes of childhood sexual abuse." Journal of the American Academy of Child and Adolescent Psychiatry **34**: 1365-1374.
  - Felitti, V., R. Anda, D. Nordenberg, D. Williamson, A. Spitz, V. Edwards, M. Koss and J. Marks (1998). "Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults." American Journal of Preventive Medicine **14**: 245-258.
  - Dinwiddie, S., C. Heath, M. Dunne, K. Bucholz, P. Madden, W. Slutske, L. Bierut, D. Statham and N. Martin (2000). "Early sexual abuse and lifetime psychopathology: A co-twin-control study." Psychological Medicine **30**: 41-52.

- Dube, S., R. Anda, V. Felitti, D. Williamson and W. Giles (2001). "Childhood abuse, household dysfunction and the risk of attempted suicide throughout the life span: Findings from the Adverse Experiences Study." Journal of the American Medical Association **286**: 3089-3096.
- Maltreatment histories associated with poor medication response and poor treatment outcomes
  - Nemeroff, C., C. Heim, M. Thase, M. Klien, A. Rush, A. Schatzberg, P. Ninan, J. McCullough, P. Weiss, D. Dunner, B. Rothbaum, S. Kornstein, G. Keitner and M. Keller (2003). "Differential responses to psychotherapy versus pharmacotherapy in patients with chronic forms of major depression and childhood trauma." Proceedings of the National Academy of Sciences **100**: 14293-14296.
  - Zlotnick, C., C. Ryan, I. Miller and G. Keitner (1995). "Childhood abuse and recovery from depression." Child Abuse & Neglect **19**: 1513-1516.
- Depression becoming the 2nd most costly illness according to the World Health Organization
  - Lopez, A. and C. Murray (1998). "The global burden of disease, 1900-2020." Nature Medicine **4**: 1241-1243.

## **Slide 5: A History of Child Maltreatment is strongly linked to Drug and Alcohol Abuse**

- Maltreatment significantly increases the risk for alcohol and drug abuse in adolescents
  - Funk, R., M. McDermeit, S. Godley and L. Adams (2003). "Maltreatment issues by level of adolescent substance abuse treatment: the extent of the problem at intake and relationship to early outcomes." Child Maltreatment **8**: 36-45.
  - Calam, R., L. Horne, D. Glasgow and A. Cox (1998). "Psychological disturbance and child sexual abuse: a follow-up study." Child Abuse & Neglect **22**: 901-913.
- Maltreatment is the best predictor of drug and alcohol abuse in women
  - Wilsnack, R., S. Wilsnack, A. Kristjanson and T. Harris (1998). "Ten-year prediction of women's drinking behavior in a nationally representative sample." Womens Health **4**: 199-230.
  - Wilsnack, S., N. Vogeltanz, A. Klassen and T. Harris (1997). "Childhood sexual abuse and women's substance abuse: national survey findings." Journal of Studies of Alcoholism **58**: 264-71.
  - Kendler, K., C. Bulik, J. Silberg, J. Hettema, J. Myers and C. Prescott (2000). "Childhood sexual abuse and adult psychiatric and substance abuse disorders in women: an epidemiological and cotwin control analysis." Archives of General Psychiatry **57**: 953-959.
  - Diaz, A., E. Simantov and V. Rickert (2002). "Effects of abuse on health." Archives of Pediatrics and Adolescent Medicine **156**: 811-817.
  - Messman-Moore, T. and P. Long (2002). "Alcohol and substance use disorders as predictors of child to adult sexual revictimization in a sample of community women." Violence and Victimization **17**: 319-40.
- Maltreatment associated with poor treatment outcomes and increased treatment drop out
  - Funk, R., M. McDermeit, S. Godley and L. Adams (2003). "Maltreatment issues by level of adolescent substance abuse treatment: the extent of the problem at intake and relationship to early outcomes." Child Maltreatment **8**: 36-45.
  - Simpson, T. (2002). "Women's treatment utilization and its relationship to childhood sexual abuse history and lifetime PTSD." Substance Abuse **23**: 17-30.

## Slide 6: A History of Child Maltreatment is Strongly Associated with HIV and STD Risk

- A history of child maltreatment dramatically increases risks for HIV-risk behavior (IV drugs, promiscuity)
  - Newcomb, M., T. Locke and R. Goodyear (2003). "Childhood experiences and psychosocial influences on HIV risk among adolescent Latinas in southern California." Cultural Diversity Ethnic and Minority Psychology **9**: 219-235.
  - Kang, S., S. Deren and M. Goldstein (2002). "Relationships between child abuse and neglect experience and HIV risk behaviors among methadone treatment drop-outs." Child Abuse & Neglect **26**: 1275-1289.
  - Cunningham, R., A. Stiffman, P. Dore and F. Earls (1994). "The association of physical and sexual abuse with HIV risk behaviors in adolescence and young adulthood: Implications for public health." Child Abuse and Neglect **18**: 233-245.
  - Wyatt, G., H. Myers, J. Williams, C. Kitchen, T. Loeb, J. Carmona, L. Wyatt, D. Chin and N. Presley (2002). "Does a history of trauma contribute to HIV risk for women of color? Implications for prevention and policy." American Journal of Public Health **92**: 660-665.
  - Freeman, R., K. Parillo, K. Collier and R. Rusek (2001). "Child and adolescent sexual abuse history in a sample of 1490 women sexual partners of injection drug-using men." Womens Health **34**: 31-49.
  - Parillo, K., R. Freeman, K. Collier and P. Young (2001). "Association between early sexual abuse and adult HIV-risky sexual behaviors among community-recruited women." Child Abuse & Neglect **25**: 335-346.
- Hx of abuse associated with difficulties in practicing safe sex precautions
  - DiIorio, C., T. Hartwell, N. Hansen and N. M. H. P. Group (2002). "Childhood sexual abuse and risk behaviors among men at high risk for HIV infection." American Journal of Public Health **92**: 214-219.
  - Kang, S., S. Deren and M. Goldstein (2002). "Relationships between child abuse and neglect experience and HIV risk behaviors among methadone treatment drop-outs." Child Abuse & Neglect **26**: 1275-1289.
  - Greenberg, J. (2001). "Childhood sexual abuse and sexually transmitted diseases in adults, a review of and implications for STD/HIV programmes." International Journal of Sexually Transmitted Diseases and AIDS **12**: 777-783.
  - NIMH Multisite HIV Prevention Trial Group (2001). "A test of factors mediating the relationship between unwanted sexual activity during childhood and risk sexual practices among women enrolled in the NIMH multisite HIV prevention trial." Womens Health **33**: 163-180.
  - Paul, J., J. Catania, L. Pollack and R. Stall (2001). "Understanding childhood sexual abuse as a predictor of sexual risk-taking among men who have sex with men: The Urban Men's Health Study." Child Abuse & Neglect **25**: 557-584.
- Hx of abuse associated with poor compliance with HIV treatment
  - Kang, S., S. Deren and M. Goldstein (2002). "Relationships between child abuse and neglect experience and HIV risk behaviors among methadone treatment drop-outs." Child Abuse & Neglect **26**: 1275-1289.
- Hx of abuse is associated with knowingly transmitting HIV by men
  - O'Leary, A., D. Purcell, R. Remien and C. Gomez (2003). "Childhood sexual abuse and sexual transmission risk behavior among HIV-positive men who have sex with men." AIDS Care **15**: 17-26.

## **Slide 7: Impairment of Physical Health: The Adverse Childhood Experiences (ACE) Studies**

- ACE questionnaire administered with medical examination to large (N~10,000) samples (Kaiser Permanente & Centers for Disease Control )
- Series of studies find a graded (dose-effect) response between number of ACEs and medical and mental health problems
  - Felitti, V., R. Anda, D. Nordenberg, D. Williamson, A. Spitz, V. Edwards, M. Koss and J. Marks (1998). "Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults." American Journal of Preventive Medicine **14**: 245-258.
  - [WWW.ACESTUDY.ORG](http://WWW.ACESTUDY.ORG) – website for ACE studies information
- Age cohort comparisons indicate that this dose-response effect remains unchanged since 1900 – despite the dramatic advancements in health care.
  - Shanta, R., S. Dube, V. Felitti, M. Dong, W. Giles and R. Anda (2003). "The impact of adverse childhood experiences on health problems: evidence from four birth cohorts dating back to 1900." Preventive Medicine **37**: 268-277.

## **Slide 8: ACE Examples**

- All examples taken from Felitti, V., R. Anda, D. Nordenberg, D. Williamson, A. Spitz, V. Edwards, M. Koss and J. Marks (1998). "Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults." American Journal of Preventive Medicine **14**: 245-258.
- See website [WWW.ACESTUDY.ORG](http://WWW.ACESTUDY.ORG) for additional examples

## **Slide 9: 2001 Estimated Direct Costs of Maltreatment = \$24 Billion**

- Dollar costs from: Fromm, S. (2001). Total estimated cost of child abuse and neglect in the United States. Chicago, Prevent Child Abuse America & Edna McConnell Clark Foundation.
- For additional cost estimates see:
  - Putnam, F. (2001). Why is it so difficult for the epidemic of child abuse to be taken seriously? The cost of child maltreatment: who pays? K. Franey, R. Geffner and R. Falconer. San Diego, Family Violence and Sexual Assault Institute: 185-198.
  - Courtney, M. (2001). Working towards the elimination of child maltreatment: the economics. The cost of child maltreatment: who pays? K. Franey, R. Geffner and R. Falconer. San Diego, Family Violence and Sexual Assault Institute: 211-222.
  - Nobuyasu, S. (2001). Cost benefit simulation analysis of catastrophic maltreatment. The cost of child maltreatment: who pays? K. Franey, R. Geffner and R. Falconer. San Diego, Family Violence and Sexual Assault Institute: 199-210.

## **Slide 10: 2001 Estimated Indirect Costs of Maltreatment = \$69 Billion**

- Dollar costs from: Fromm, S. (2001). Total estimated cost of child abuse and neglect in the United States. Chicago, Prevent Child Abuse America & Edna McConnell Clark Foundation.

## Slide 11: Prevention Works and is Cost Effective!

- Median reduction in child maltreatment = 40%
  - Meta-analysis by the Centers for Disease Control – Findings from the Task Force on Community Preventive Services (2003). First reports evaluating the effectiveness of strategies for preventing violence: Early childhood home visitation and firearms laws. Morbidity and Mortality Weekly Report, Oct 3, 2003/Vol. 52/No. RR-14. Department of Health and Human Services, Centers for Disease Control and Prevention.
- Other Meta-analyses of child abuse prevention programs
  - MacLeod, J. and G. Nelson (2000). "Programs for the promotion of family wellness and the prevention of child maltreatment: A meta-analytic review." Child Abuse & Neglect **24**: 1127-1150.
  - Rispens, J., A. Aleman and P. Goudena (1997). "Prevention of child sexual victimization: A meta-analysis of school programs." Child Abuse & Neglect **21**: 975-87.
- Economic Analyses of child abuse prevention programs
  - Courtney, M. (2001). Working towards the elimination of child maltreatment: the economics. The cost of child maltreatment: who pays? K. Franey, R. Geffner and R. Falconer. San Diego, Family Violence and Sexual Assault Institute: 211-222.
  - The RAND Corporation conducted an economic evaluation of a 15-year follow-up of the Nurse Family Partnership program and estimated a 4-fold return on investment over the lifetime of the children. Karoly LA, Greenwood PW, Everingham SS et al. (1998): Investing in our children: What we know and don't know about the costs and benefits of early childhood interventions. Santa Monica, CA: The RAND Corporation.

## Slide 12: Conclusions