

Profile Instrument to Predict Recurrence of Suicidal Attempts in Washington State



Dr. V. Vatsalya
American University
Washington DC

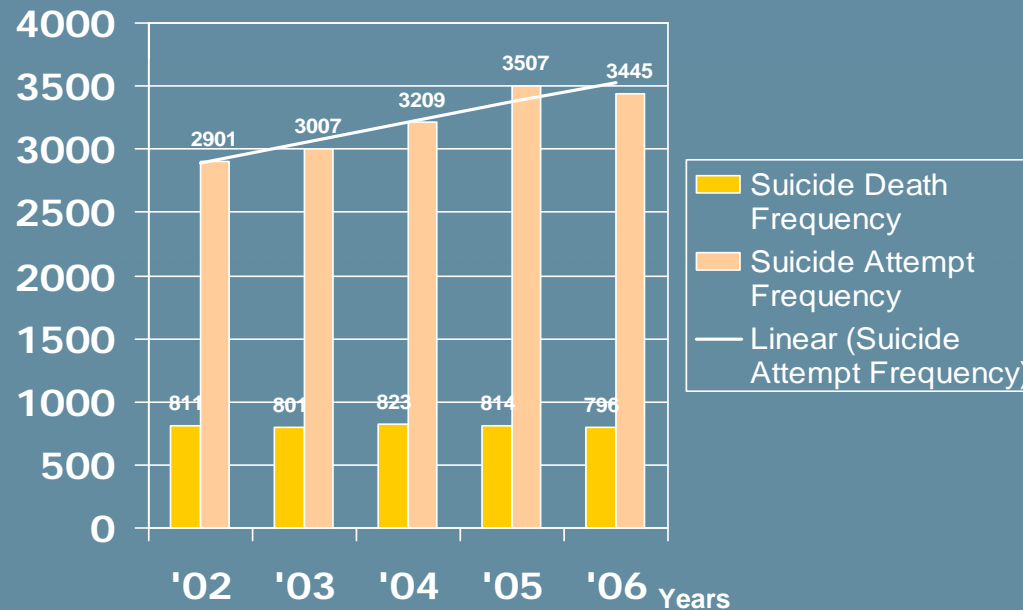
Introduction

In Washington State, 814 death are reported in year 2005 at a rate of 13.1 incidents per 100,000 (age adjusted), compared to the national US rate of nearly 11.0.

Washington has the 16th highest suicide rate in the nation, and suicide is the eleventh leading cause of death.

Extent for emotional and physical pain cannot be assessed for individuals and their relatives, 3 billion US Dollars of loss has been estimated due to suicide and attempts.

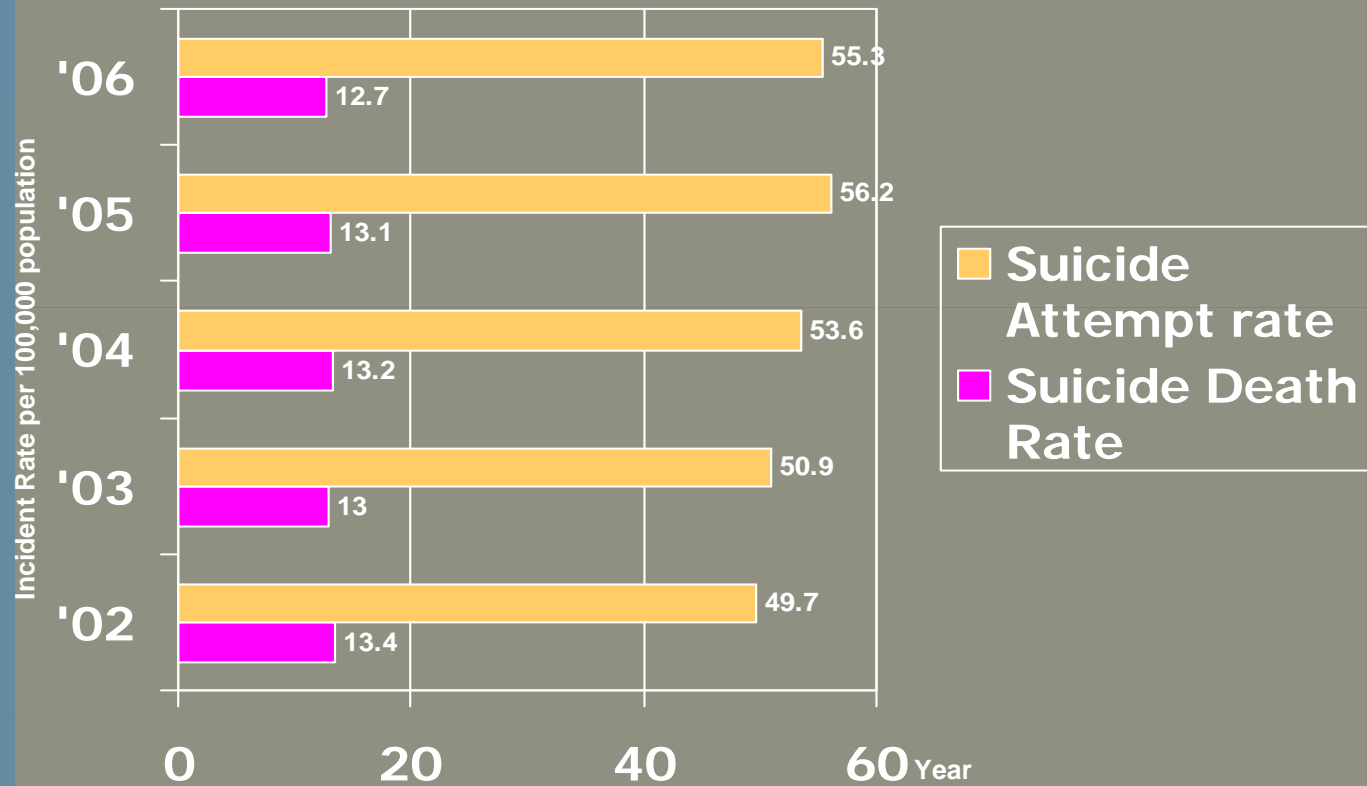
Frequency representation of Suicidal Incidents



Incidence of suicide attempts can be five times or more than suicide, number of suicide attempts are higher when causative factors are not resolved.

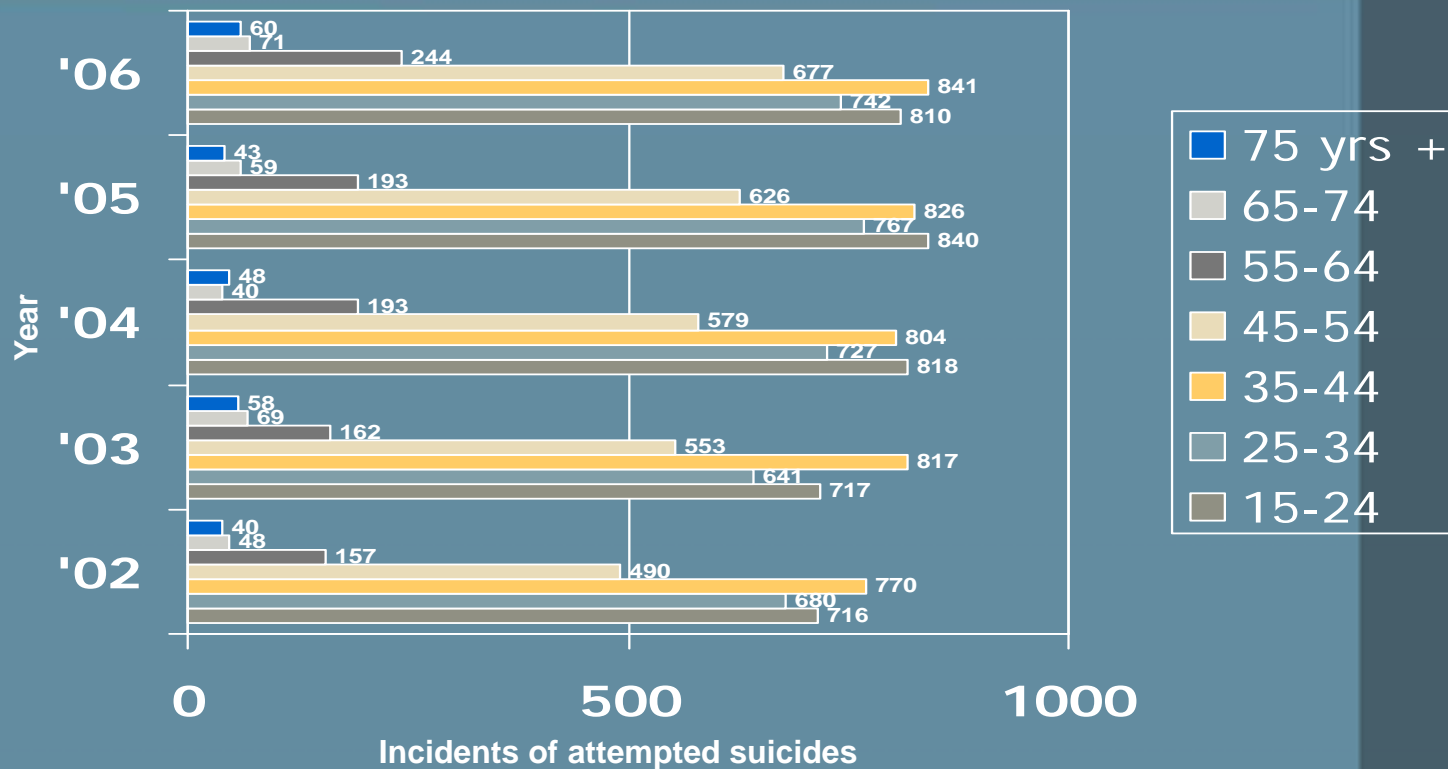
Source: DOH, WA, 2007

Rate Representation of the Suicide Incidents



Rise in the suicide attempt rate is observed on an yearly basis.

Suicide attempts among various age groups

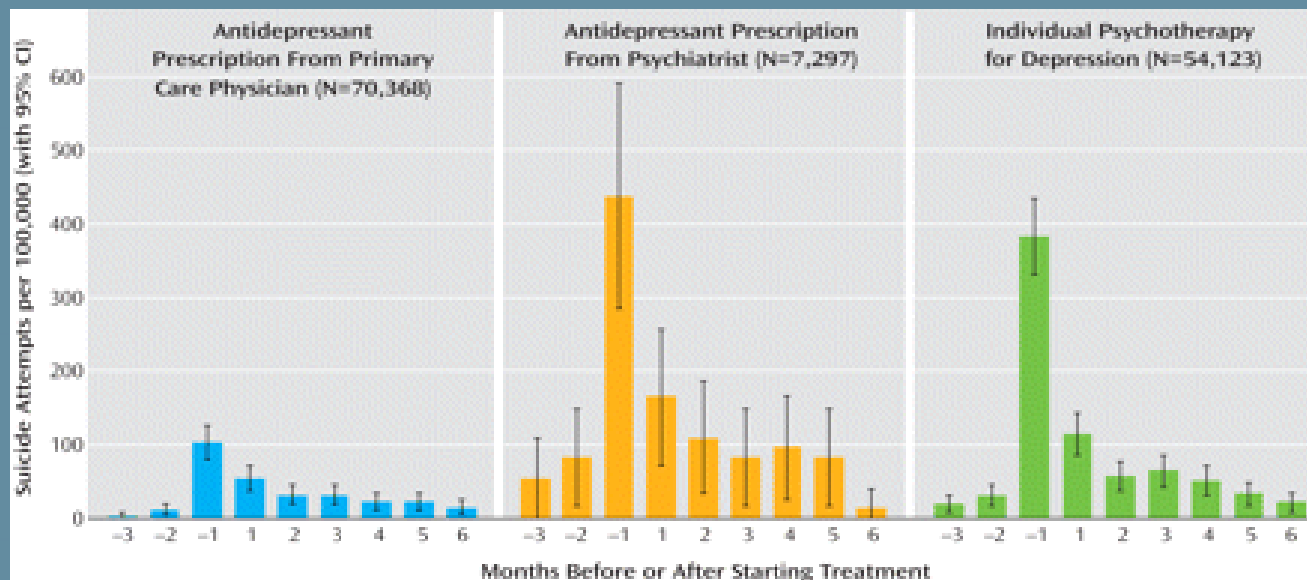


In 2004, 17 % of deaths in the 15 – 24 yrs age group occurred due to suicide . Suicide is the second leading cause of death in this age group.

The highest rate of suicide is observed in the 75 yrs+ age group.

Role of Treatment

Risk of suicide attempt before and after treatment among adolescents and adults receiving new treatment from primary care physicians, psychiatrists, or individual psychotherapy for depression.



Reports suggest same pattern of suicide attempt rate during the first month of treatment after getting health services in Washington State (Am J Psychiatry. 2007; 164:1029-1034). This rate is much higher than other states.

The present suicide death rate in Washington State does not indicate meeting the “Healthy People 2010 Goal” to reduce the age-adjusted rate of suicide to five per 100,000 by 2010.

Various intervention strategies utilize preventive actions to reduce such incidents. Preventive strategies need precise measures to identify high - risk individuals.

Development of a predictor instrument, which can provide appropriate behavioral evaluation, can supplement to this requirement.

This instrument uses set of primary repetitive characters for predictable behavioral analysis of high-risk group individuals.

Concept:

Identify patients with suicidal behavior

Assist informing healthcare staff

Prepare and implement specific therapeutic plan

Outcome:

Strengthening intervention strategies by behavior interception

Decline of such incidents

Regularize health and financial resources

Methodology for Development of Profile Predictor Instrument.

Data source

- Washington State public health statistical data bank
- GIS
- Group Health Cooperative Health, 2006 yr
- Washington State Injury and Violence Prevention Program (Record Release, 2002 – 2006 yr)

Patient population

- Year: 2002 to 2006
- Statistical data from number of patients: 15826
- Age group: 15 to 75+ years

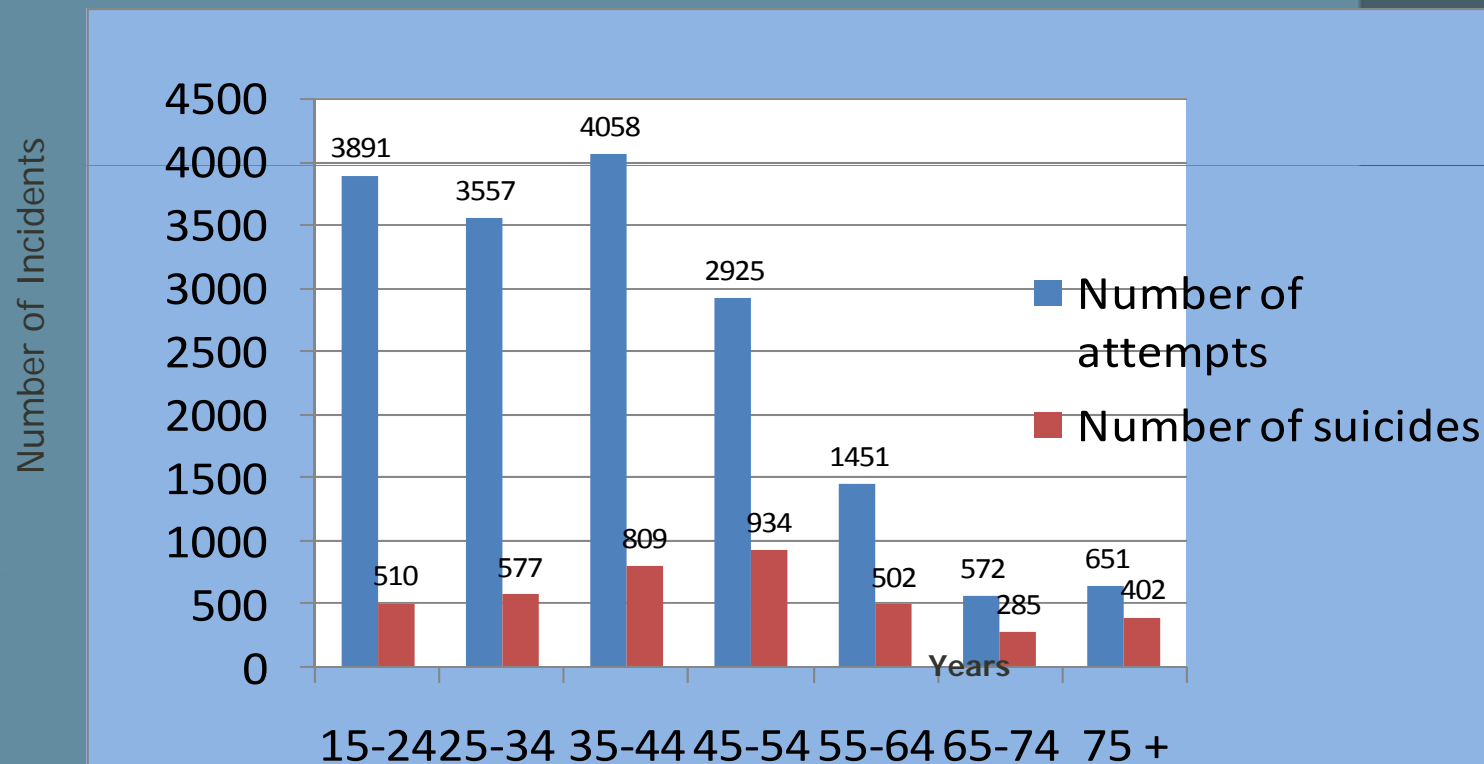
Parameters investigated

- Gender groups
- Age groups
- Medical and mental conditions
- Environmental, biological and economic factors;
- Social, race, ethnicity, cultural background, communities and regions.

Compilation of Instrument/ Follow up

Results

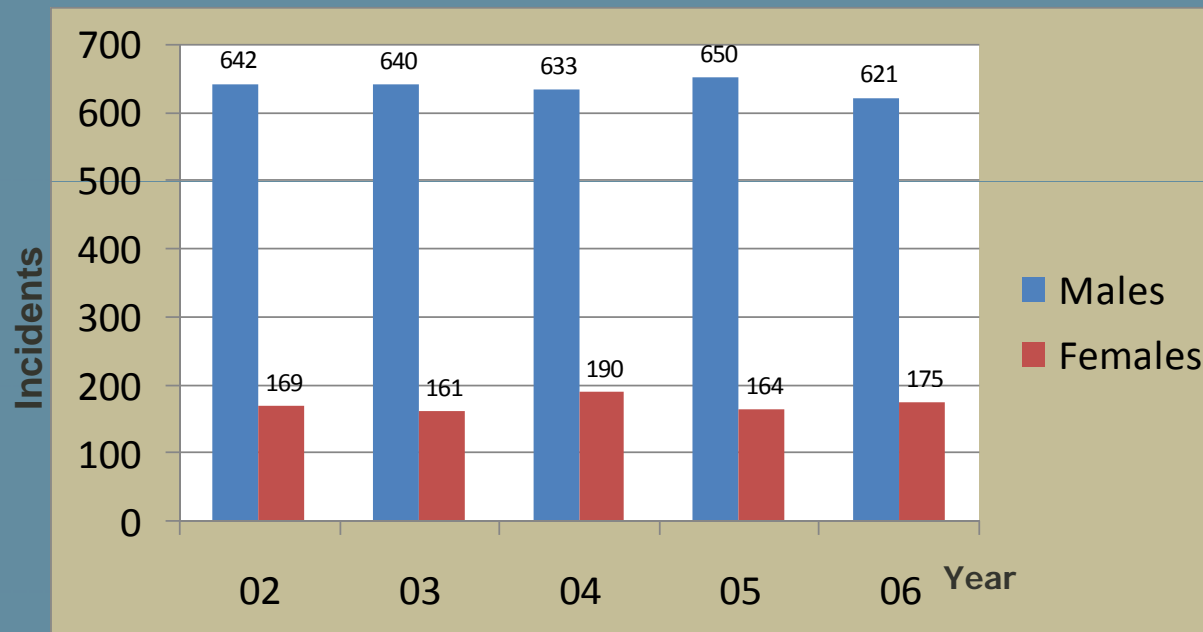
The parameters are assessed in relation to the numbers of attempts and actual suicides reported between year '02 and '06. Some significant statistical analysis demonstrated characteristics as discussed further:



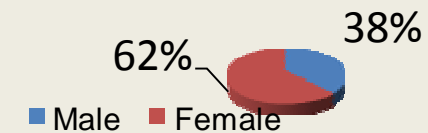
The age groups 15-24 and 35-44 yrs has the maximum incidents of attempted suicides. The largest conversion of the attempts into actual suicide is demonstrated by the age group 45 – 54 yrs.

Gender comparison of suicide incidents

Number of Suicides



Suicide Attempt %

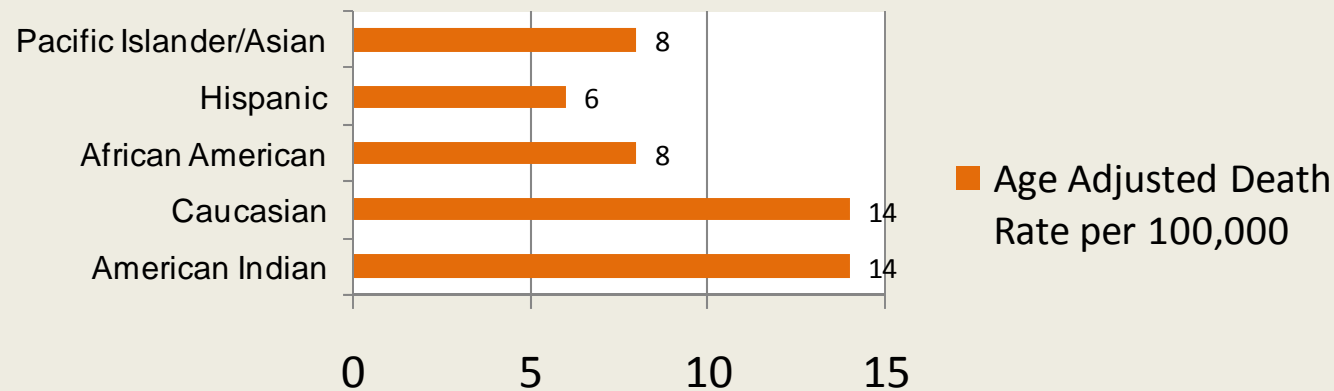


Suicide rate among the male and female patient population rate is 4:1.

During 2003–2005, males in Washington accounted for 79% of completed suicides.

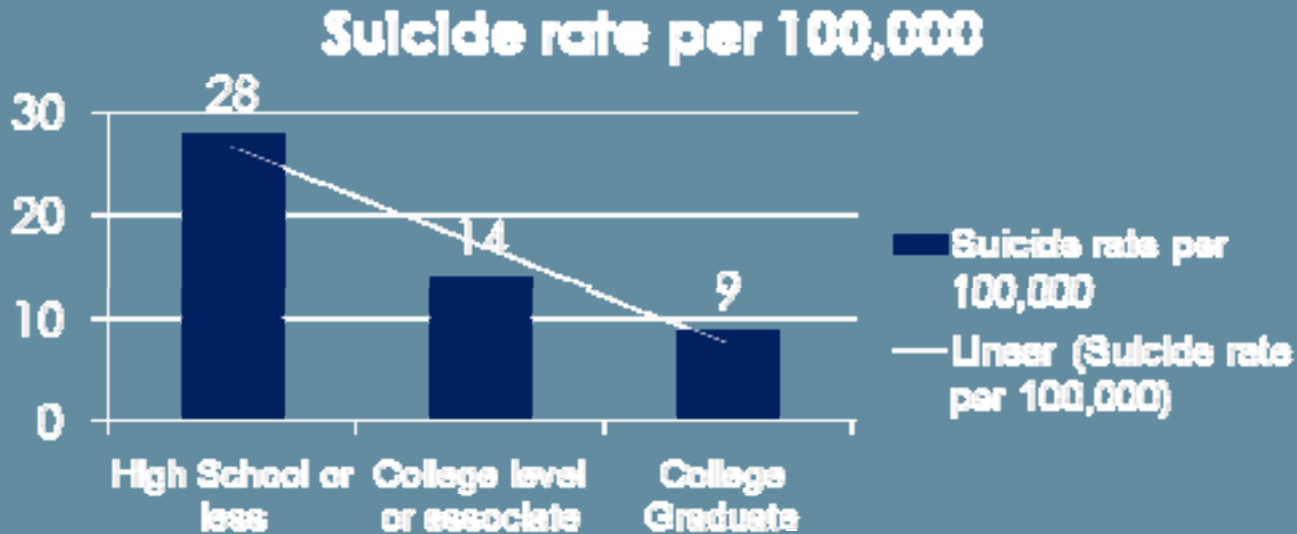
Race comparison for Suicide Incidents

Age Adjusted Death Rate per 100,000



Suicide rate has been highest among the Caucasian and Native American communities. High competition, depression and economic and social hardship is observed with Caucasian group and family predisposition, abuse, addiction and health concerns with Native American were prominent.

Significances of Income and Education Criteria



Linear regression of suicide rate with higher academics relate to better living standards, understanding and social ranking.

In Washington, for 2000–2002 combined, suicide rates increased as the proportion of people living in poverty increased. Data is not available in relation to suicide.

Effect of Depression on Suicide Attempts

Adults:

From 2002 year onwards, there is a steady increase yearly, both in the rate and number of suicides and suicide attempts in the 35 – 54 age group.

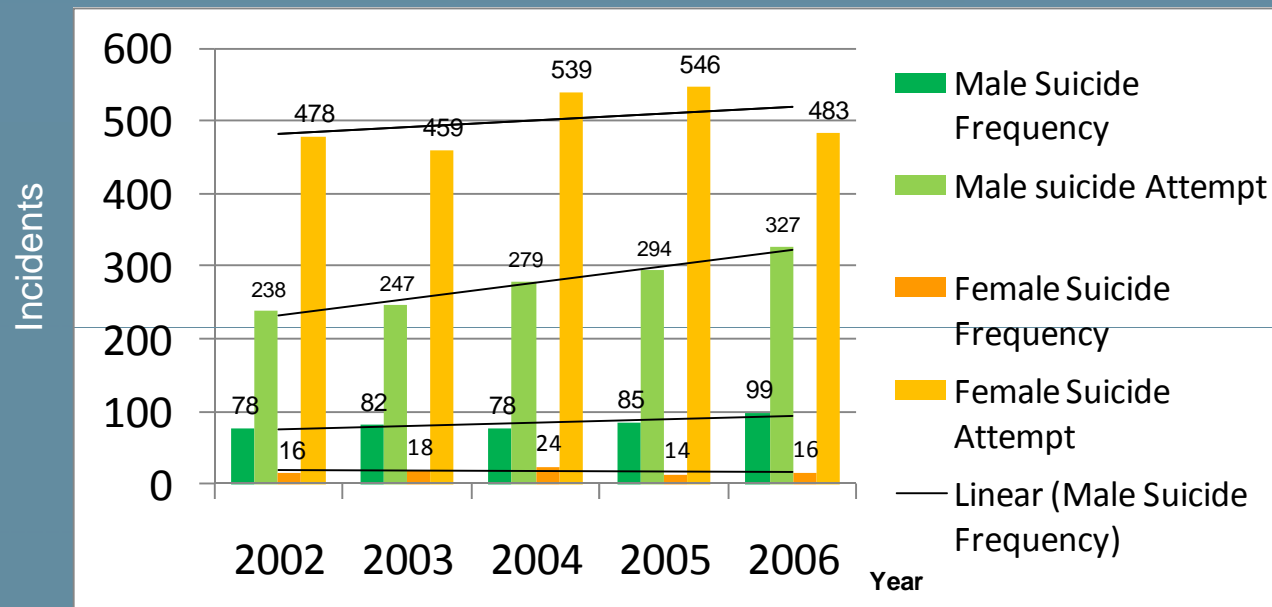
Rise in financial and family crisis and PTSD.

Adolescent and Young Adult Group:

Nearly 1-in-5 10th graders report serious contemplated suicide, of these, over 60% say they made a suicide plan (Washington State Healthy Youth Survey).

Individuals with physical and sexual abuse have four times higher suicide attempt rate than non-abused.

Effect of Depression on Youth Suicide and attempted suicide rate



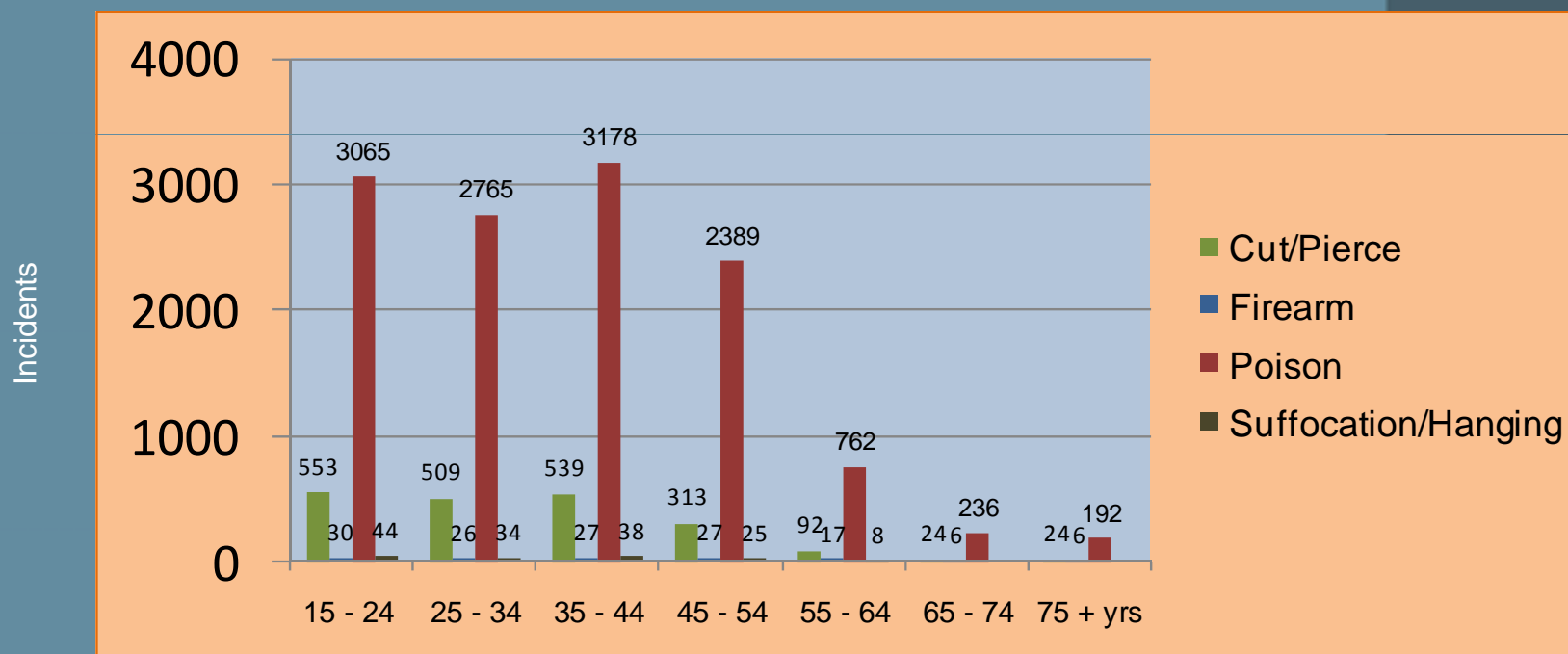
Approximately 25% of attempted suicide by youth male result in death, whereas 3 - 4% death result in females.

Nearly two-thirds of teens with clinical depression go unnoticed and may not get treated. Males 15 to 19 years old are 5 times more likely than females to complete suicides.

Source: DOH, WA, 2007

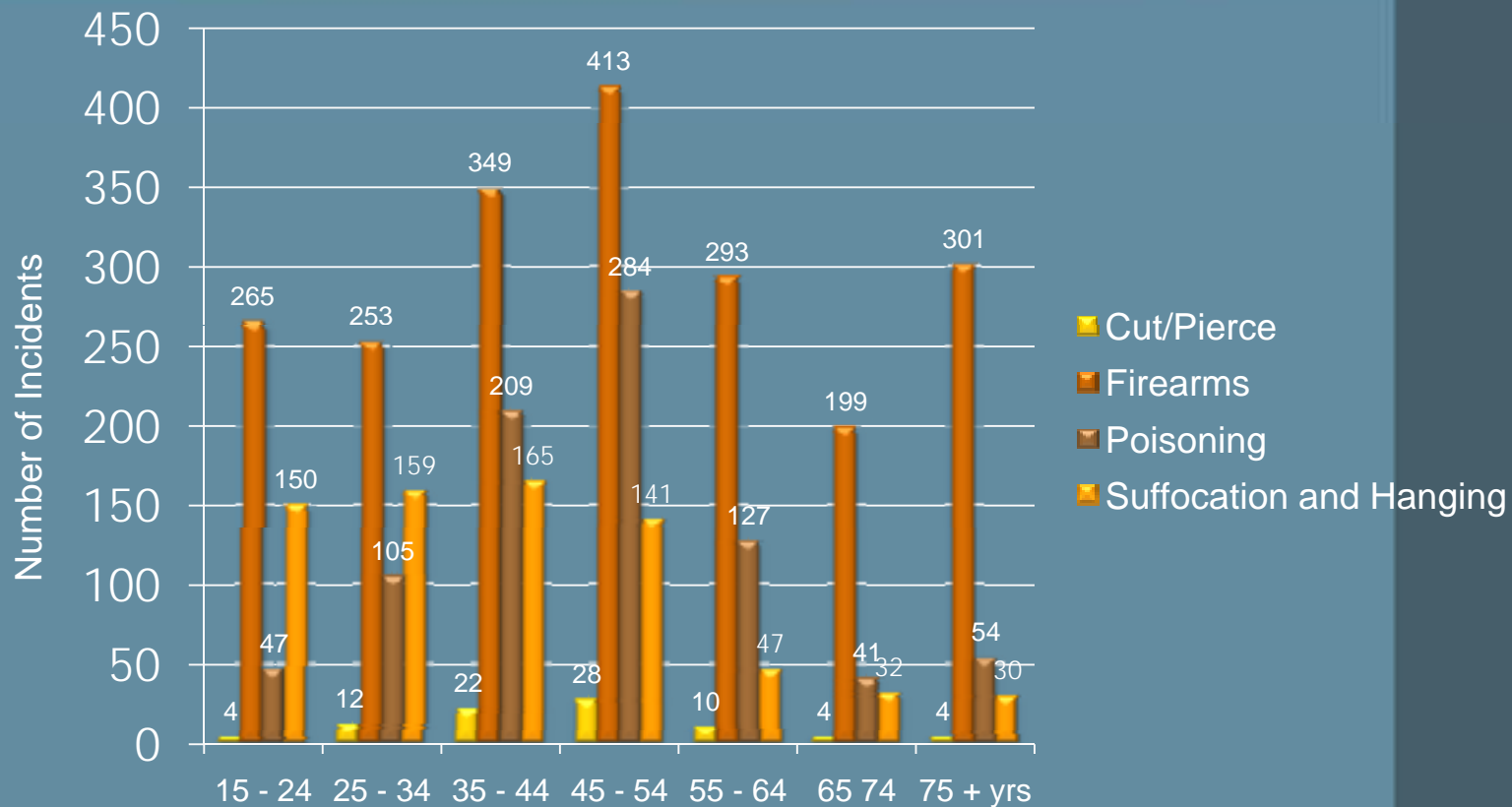
Access and Exposure to Means of Suicide

Suicide Attempt with various medium used



Poisoning is the most common means for attempted suicide cases among 15 -24 and 35 – 54 age group.

Various medium used in suicide



Firearms are the most common means among the young and adult groups for committing suicide.

The Profile Instrument Based on the results of statistical analysis and interpretation, following characteristics have been incorporated for the instrument development:

- Age Group: 15 – 24 and 35 – 54 year period (there is a constant rise yearly in the latter age group).
- Gender: higher suicide rate among males, though higher attempt rate among females.
- Ethnicity: Prevalent in Caucasian and Native Indian groups.
- Mental health: depression, substance abuse, suicidal ideation and other conditions (Family history, sexual orientation and abuse, disability).
- Education: Less the education, more the probability.

- Anti-depressant Treatment: Individuals in the first month of treatment are highly susceptible to suicide attempts.
- Social condition: financial hardship, loss in family structure and unemployment.
- Access and exposure to perform self-fatality (adolescent, young adults and Native Indians use firearms and females and others poison mostly).

Based of the results of the statistical analysis, a model of the instrument can be established.

Such a model has been discussed here, this model commences with the major parameters assessed and thereafter further ones.

It categorizes patients assessed among high - risk, intermediate and low - risk groups.

Generalized model of the instrument

Intake

Gender

Male
Female

Age Group(yrs)

15-24
24-34
35-44
45-54
55-64
65-74
75+

Ethnicity ↓

Caucasian
Black
Hispanic
Native Indian

Health ↓

Depression
Physical and sexual abuse
Previous attempts
Antidepressant medication
Substance abuse
Disability
Family history

Social conditions

Financial hardship
Loss of family
Unemployment

Education

Less than school
Some college
Graduate or more

Access to Means

Firearms
Poisoning
Cut/Pierce
Hanging/Suffocation

High Risk
Intermediate Risk
Low Risk

Conclusion

Due to highly complex interplay of mental, social, biological and psychiatric features, suicidal behavior requires accurate and urgent intervention.

Multiple causative factors are associated with suicide, early identification and appropriate treatment is an important strategy for prevention.

Application of a predictor instrument can supplement identifying target individuals and preventing suicide, who otherwise may not be recognized in due course.

The characteristics of suicidal behavior may differ due to local variations. Study is required to customize this instrument with local specifications.

Further research can improve consistency of the instrument with future data and broadening the study for successful implementation in North America.

Recommendations:

- Administrative encouragement for broadening data collection for possible suicidal attempts and minority groups. Research has not yet evaluated the relative importance of race, ethnicity, poverty, and education in relation to rates of suicide.
- Introduction and usage of the instrument at the community level for example academic institutions, old age homes.
- Planning and Introduction of Intervention Strategies for newly growing suicidal incidents in the 45 -54 yr age group.
- Further study and resource development on biological (Polymorphisms of the Tryptophan Hydroxylase Gene, low serum cholesterol level and likewise) and environmental factors.

References

- <http://ajp.psyhiatryonline.org/cgi>
- http://www.doh.wa.gov/ehsphi/chs-data/death/dea_VD.htm
- <http://www.doh.wa.gov/EHSPHL/hospdata/default.htm>
- <http://ww4.doh.wa.gov/gis/gisdata.htm>
- <http://www.doh.wa.gov/hsqa/emstrauma/injury/data-tables>
- <http://www.doh.wa.gov/HWS/default.htm>

Rotheram-Borus, M. J., Piacentini, J., Cantwell, C., Beline, T. R., & Sone, J. (2000). The 18-month impact of an emergency room intervention for adolescent female suicide attempters. *Journal of Counseling and Clinical Psychology, 68*(6), 1081-1093.

Schulberg, H. C., Bryce, C., Chism, K., Mulsant, B. H., Rollman, B., Bruce, M., et al. (2001). Managing late-life depression in primary care practice: A case study of the Health Specialist's role. *International Journal of Geriatric Psychiatry, 16*, 577-584.

Shaffer, D., Scott, M., Wilcox, H., Maslow, C., Hicks, R., Lucas, C. P., & Garfinkel, R. (2004). The Columbia TeenScreen: Validity and reliability of a screen for youth suicide and depression. *Journal of the American Academy of Child and Adolescent Psychiatry, 43*(1), 1-9.

U.S. Centers for Disease Control and Prevention, National Centers for Injury Prevention and Control. (2007). Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved January 3, 2007 from www.cdc.gov/ncipc/wisqars.

Washington State Department of Health. (2004). Suicide chapter, *The Health of Washington State 2004 Supplement*. Olympia, WA. Retrieved January 2, 2007 from <http://www.doh.wa.gov/HWS/HWS2004supp.htm>.

Acknowledgement

Dr. Robert Karch
Health Promotion MS Program
American University Washington DC

Dr. Kan V. Chandras
Mental Health Counseling Program
Fort Valley State University Georgia

Dr. Shweta Srivastava
Department of Biology
Georgetown University Washington DC

Questions and Comments