

## A regression and testing approach to scientifically reducing violence

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The organization of this paper includes the first group dealing with the scientific approaches to violence detection, the second group dealing with the application of these scientific approaches to an urban setting, a third group covering the local and the national application of this scientific approach, and the fourth group giving some practical guidance to executive decision makers.

Group 1 was the regression for community identified most at risk students; (a) the experimental design of fitting an age-specific, executive-function, economic-neurological-sociological theory of violence to an urban school setting; (b) the fact that there were 90 years of actuarial assessment of youths and adults on 3 continents, and in 6 countries and 15 U.S. states; and (c) a brief history of actuarial assessment including regression to predict most at risk.

Group 2 is the application of scientific approaches to an urban setting. This includes: (d) the application of regression for community-identified most at risk persons; and (e) the empirical treatments that successfully divert youths from court

Group 3 was applying scientific approaches locally and nationally. This has: (f) the replication of the youths homicide prediction on a new sample of teen shootings; (g) the application of treatments that work precisely targeted to the most at risk teens; (h) the computation of lives, assaults and resources saved; and (i) the present value of resources saved with 2% and 10% discount rates

Group 4 was the practical guidelines for the executive decision makers. This includes: (j) how can estimates be applied in the real world to a model city of 5,000,000 and model country of 300,000,000; (k) the Return on Investment (ROI) of treatments that work; (l) the national school and university homicide rates from 1993 to 2012; (m) the estimates of targeted treatments-monitoring versus electronic monitoring versus incarceration versus hospital admission costs; (n) the savings by using computerized tests; (o) the violence reduction checklist of 16 risks and 16 treatments that work for executive decision makers; (p) the limitations; (q) the implications; and (r) the conclusions of the 5 regression equations and targeted treatments that saved 98 lives and \$492M.

### Biography

Robert John Zagar, Ph.D., M.P.H., is an outstanding Researcher, Statistician, Distinguished Professor, & Businessman. He is an expert in research design & statistics. With robust math & experimental design, he extended the measurement of homicide in both males & females from infancy to adulthood with unprecedented sensitivity & specificity at the 90+% level. He has cost beneficial efficient approaches: (a) of targeting interventions to prevent violence at the macro level in communities; & (b) actuarial assessment at the micro level in school-university, workplace, & place of worship organizations, i.e., military, nonprofit-religious, airline, nuclear power, police-fire, prisons, volatile trucking, power grid, worker's compensation, & personal injury.

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