**Annual Summit on Infectious Disease & Healthcare, May 18-20, 2020, Paris, France**

I. **Title: HIV risk transmission & mitigation: Vulnerable subgroups, structural & direct violence.**

II. **AI deep reinforcement learning using artificial neural networks following exposure to direct violence & structural violence to override human decision-making for persons at risk of sexual assault & HIV risk transmission.**

[1] Institute of Bioethics & Patient Access to Life. www.institutebioethicspatientaccesstolife.org

**Keywords: HIV risk transmission, socio demographics, structural violence, bioinformatics, morbidity, mortality, sexual assault, decision-making, moral, cognitive and emotional intelligence in leaders & followers, social, civil, political institutions, artificial intelligence, artificial neural networks, decision-making, backpropagation, deep reinforcement learning.**

**Problem Identification**

III. Socio demographics, sexual assault, trauma & revictimization play an integral role in victim exposure to both direct & structural violence. Direct and structural violence, male condom refusal may be precursors to HIV risk transmission. The researcher discusses the moral, emotional and cognitive intelligence required in decision-making across social, civil & political institutions to reduce direct & structural violence and HIV transmission. She reviews the neuroscience of morality and its role in enabling and/or preventing harm in law enforcement, medicine, civil service, politics and judicial institutions.

Precursors to HIV transmission in women include sexual intercourse, socioeconomic demographics, trauma, gender, race and disability status. The researcher in health economics, outcomes research completed a Master's degree in leadership studies from 2006-2009 defining human intelligence for decision- making and leadership in a society. From 2010-2019 the researcher investigated and documented social, civil and political institutions and the role they play in putting victims of violence in harm's way.

IV. A framework was developed transferring cognitive, moral and emotional intelligence to artificial neural networks for harm reduction across social, civil & political decision-making. Decisions may facilitate revictimization & HIV risk exposure. To "err is human". Humans cannot assimilate & distinguish objective vs. subjective reality criteria. Data from bioinformatics for decision-making require integration in machine learning to establish objectivity. Artificial neural networks (artificial intelligence) algorithms may assist decision-makers in identifying blind spots. Victim revictimization and the indirect facilitation of morbidity, mortality based on promoting HIV virus transmission to specific at risk subgroups is discussed. A solution using artificial intelligence is proposed.

**V.**





**VI. References:**

2. Boylan, R.M. Direct & Structural Violence across human systems: An investigational inquiry into human systems in Canada. 2010-2019. Evidence on file.

3. Boylan, R.M. The interplay of Abraham Maslow, Jane Loevinger's research on ego development and levels of cognitive, moral & emotional intelligence in the brains of humans. 2006-2009. University of Guelph, School of Management.

**4.** Lane, S., Keefe, R.H., Rubinstein, R.A., Webster, N.J., Structural Violence and racial disparity in HIV transmission. Journal of Healthcare for the Poor and Underserved 15(3): 319-335.

**5. Biography:**

6. Rose-Marie Boylan, BSc. M.A. is a healthcare professional by trade & medical sociologist. She has worked across 10 of the largest & mid-sized pharmaceutical companies for over 27 years. She has specialized in patient access to medicines, patient reported outcomes, health economics, policy influence for patient self-sovereignty. In parallel, Rose-Marie has researched for over 13 years social, civil and political cost-consequence & cost-benefit's of psychiatry, mind body medicine tools & human flourishing in violence survivors. This includes a cost-consequence model.

She completed her Masters in 2009 in Leadership Studies with research on the optimum levels that humans can attain in a life time for self-actualization, human potential & human flourishing. Leveraging the research of Abraham Maslow & Jane Loevinger on ego development she developed a model which defines human intelligence, mind health vs. psychopathologies. For over 15 years Rose-Marie studied mind-body medicine with Dr. Herbert Benson from Harvard's Mind Body Institute, Jon Kabat-Zin from the University of Massachusetts School of Preventive & Behavioral Medicine, mindfulness meditation, mind medicine alternatives.



**7. Presenting author details**

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