**THE PROBLEM**

- Higher Smoke or BC emissions in the global South countries; major source of respiratory health risks.
- Climate change potential of SMOKO: the second strongest cause of climate change after CO2.
- The observed lack of air pollution control systems in healthcare waste (HCW) incineration activities and open burning HCW disposal practices in the global South countries including Haiti.

**OBJECTIVES OF THIS STUDY**

- To determine whether HCW incinerated weights before and after the January 2010 earthquake and October 2010 cholera disasters in Haiti follow a linear pattern.
- To measure the average smoke densities coming from incineration of plastic and cardboard sharps HCW containers.
- To determine if cardboard HCW sharps containers emit lower BC emissions to the atmosphere during the incineration process, relative to the plastic sharps containers.

**RESEARCH QUESTIONS**

- Do HCW incinerated weights before and after the January 2010 earthquake and October 2010 cholera disasters in Haiti follow a linear pattern?
- Do the cardboard HCW sharps containers emit lower BC emissions to the atmosphere during the incineration process, relative to the plastic sharps containers?

**METHODS**

- Quantitative-observational study. Sources of data: (i) MINUSTAH HCW incineration data (January 2009-December 2013, n = 60 months), (ii) Physical reading of smoke level from incineration activities (n = 10 cycles/30 min). Three smoke readers (Researcher as USEPA certified Visible Emissions Reader) and 2 trained smoke readers participated in data collection. **Ringelmenn Smoke Chart** used as data collection tool.
- IRB approval obtained, pilot data collection conducted and SPSS software used for data analysis (Linear Regression, Independent samples t-test).

**RESULTS**

- Linear regression analysis of the pattern of HCW incinerated weights revealed a relatively linear pattern ($R^2 = 0.164$) with fluctuating scenarios (peak sharp rise in 2012 resulting from incineration of expired pharmaceuticals after the emergency).
- Independent samples t-tests demonstrated significantly lower smoke processes during the incineration processes of cardboard sharps HCW containers as compared to plastic containers (95% CI, $p = 0.003$).

**CONCLUSION**

BC emissions are a growing threat to human health and climate change with extreme impacts in the global South countries where over three-quarters of BC emissions are produced. Reducing man-made emergency situations will reduce BC emissions for healthier people and climate.

**REFERENCES**


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Special thanks to my dissertation committee members, the chair, Dr. Patrick Tschida, committee members: Dr. David Anderson, University Research Reviewer Dr. Raymond Then, and the management of United Nations Mission for Stabilization in Haiti (MINUSTAH), Ministry of Public Health and Population (MSPH) in Haiti, British Standards Institution (BSI) and Institutional Review Board (IRB).