**Title:** The economic impact of poisoning in British Columbia: a societal perspective
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General comments (author response in bold)

The use of a discount rate is primarily to reflect the time cost of money, in addition to technological advances. Also, future technological innovation might even increase productivity, increasing the value of indirect losses in future years, other things equal.
**Thank you for this useful insight. We have included this information on page 4 of the methods section as follows:**
*Recognizing that future costs are usually less than present costs due to scientific and technological advancement, direct and indirect costs were discounted to 1.5% per annum to reflect the time cost of money as well as the technological advances.*
**As well as in the limitations section on page 9 as follows:**
*Finally, the indirect costs are underestimated as future technological innovation and advancement may increase productivity, which are not reflected in the indirect cost calculations.*

The authors should provide more information on how morbidity and disability were included in the calculation of indirect costs of lost productivity. What assumptions were made? To what extent are patient-specific durations of morbidity and disability observed? It is just lost time arising from the hospital stay (which in Table 4 is trivial)?

Do they have a sense of the incidence of long term disability or other serious health consequences arising from poisoning?

Generally, the authors could be clearer in the presentation about exactly what costs (direct and indirect) are measured, what costs are imputed and what costs are omitted.

For example, indirect morbidity and disability costs are included (p7) but indirect costs arising from long term disability are not (p11).

**Thank you for your feedback and suggestions. We have included language in the revised manuscript on page 4 to specify the use of average costs instead of patient-specific durations of morbidity and disability. This is presented on page 4 and reads:**
*For the purposes of this study, we used average provincial costs of relevant health services, average length of hospital stay, average hospital resource allocation costs, and average disability weights to estimate victim costs.*
**We have included the indirect cost components in Table 1 on page 12 to include indirect cost components for deaths and hospitalizations.**
**Indirect costs for morbidity were based on lost time from work due to hospital stay. We have made this explicit in the manuscript on page 4 to read:**
*Indirect costs are losses to societal productivity, which account for the poisoned individual's inability to perform their major activities of daily living and contribute to society, and include the value of time lost from work due to hospital stay, ......*

On p7 the authors state "Transfer payments from government or social services were not included as they are a reallocation of resources and the net effect of the transfer to society is zero." This is not necessarily true to the extent that the availability and generosity of transfer payments can alter an injured person's incentives about returning to work, for example if they crowd out employment income.

**Thank you for this useful insight. We have included language in the revised manuscript to address this. This can be found on page 5 to read as:**

*Transfer payments from government or social services were not included as they are a reallocation of resources. There may be instances when the availability of transfer payments can impact an individual's incentive to return to work. The transfer payments may vary as a result of economic recessions and various global situations, hence information may not be as readily available or applicable to a given year.*

In the calculation of productivity losses, do the authors use age/sex-specific average wage rates to reflect differences in the value of lost productivity over the life course? Similarly, are participation and unemployment rates also age/sex specific? They should be.

**Thank you for your comment. We agree that the average wage rates, participation and unemployment rates may reflect differences in the value of lost productivity over the life course. We were however, limited to what was developed in the costing model (ERAT), where these rates were not distinguished for age group and sex. We will in the future, work on adapting the model to incorporate these.**

It is not clear whether any productivity losses are imputed for those who are under the age of 15. While there might not be a loss of productivity for morbidity/disability for youth and children (aside from those poisonings resulting from long term disability), that is certainly not the case for mortality. I note that according to table 3 there are 0.0 deaths from poisoning per 100k people for children under the age of 15 so perhaps the impact on indirect costs is quantitatively small anyway because the actual number of young person deaths is very low.

**Indirect costs were only assigned to those 15-64 years of age. Indirect costs associated with deaths and long-term disability for those under 15 would only include costs for ages 15 to 64. This has been added to page 6 where we mention:**
*We calculated productivity losses using B.C. unemployment rates, labour force participation rates, and average wage rates. Indirect costs were assigned to those 15 to 64 years of age, as it was assumed that they had all contributed to society, while those under 15 years were not yet part the workforce, and those 65 years and older had left the workforce. Indirect costs associated with deaths and long-term disability for those under 15 would only include costs for ages 15 to 64 years of age.*

Where there are assumptions from national data or the literature employed, could the authors consider a range of potential values in order to assess the sensitivity of the analysis to changes in those parameters?

**Thank you for this comment. We have conducted sensitivity analysis and have included Table 6 on page 17 of the revised manuscript. Please see response to editors comment #15.**

**Reviewer 2:** Dr. Eric Kai Chung Wong

**Institution:** Department of Medicine, University of Toronto
General comments (author response in bold)

The authors conducted a cost analysis of poisonings in BC in 2016 from a societal perspective. Estimates of death, hospitalizations and emergency room visits were obtained from administrative databases. Indirect costs were estimated mainly using opportunity costs based on the age of the patients.

Strengths:
• Considered both direct and indirect costs
• Stated assumptions clearly, including lack of certain data, including mental health
• Accounted for discounting
**Thank you for your feedback.**

Limitations/suggestions:
• I think the CHEERS reporting framework is potentially applicable here since it is intended for economic evaluations. Not all items in the reporting guideline are relevant, so you can just report on the relevant items.
**Thank you. This has been noted.**
**We have completed the CHEERS reporting framework where applicable.**

• I notice this cost analysis does not report ranges or confidence intervals (the estimates are all fixed costs). I'm not sure if it's standard practice to include ranges in cost analyses, but given the number of assumptions employed, I would think some amount of uncertainty exists.
**Thank you for this comment. We have conducted sensitivity analysis and have included a Table 6 on page 17. Please see response to editors comment #15.**

• "In hospital deaths were excluded from the total hospital count as they were included in the death count." – but cost of the hospitalization was still included in those who died, as I see from table 1. Is that correct?
**Yes this is correct.**

• As the authors stated, the bulk of the total cost comes from the indirect costs of death. Is it a fair assumption that the population dying from poisonings are similar to the general population?
**The rate per 100,000 population for all injuries (excluding poisoning) and poisoning for B.C. in 2016, by age group, is depicted below. As seen, there are some variations in the patterns by age group. Highest death rates for all injuries are seen amongst the older population, while high death rates for poisoning are observed in the younger age groups. Therefore, the population dying from poisonings are not similar to the general injury population. Please note that this information and chart is provided for the reviewer's interest only and is not included in the manuscript. The purpose of the study was to examine health and economic costs of poisoning, and not to compare with other injury deaths and ages.**

Death Rate per 100,000 Population, B.C., 2016
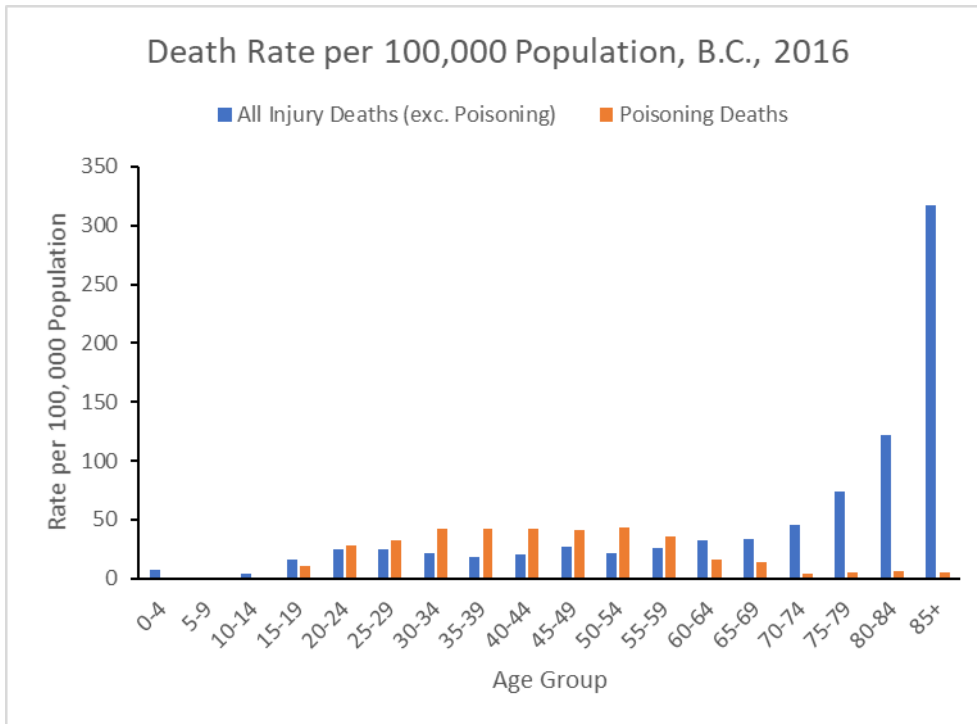
Would they have the same productivity and unemployment rate as the general public?
**Yes we would assume they would have the same productivity and unemployment rate as the general public. We have included this statement in the methods section on page 4 for clarification. The paragraph now reads as:**
*A labour productivity growth rate of 1.0%, a labour participation rate of 64.4%, an unemployment rate of 6.0%, and an average weekly earning of $897 were applied.13 It is assumed that the poisoned individual would have the same productivity and unemployment rate as the general public.*