Are we overlooking the psychosocial impacts of contaminated sites during HHRAs? Considering a First Nations’ perspective in support of the principles of sustainable development
Outline

1 Definitions
2 Types of Impact Assessments used in Canada
3 Psychological and Social Factors
4 A First Nation’s Perspective
5 Proposed Way-Forward
1 Definitions

psychosocial

adjective 1 psy·cho·so·cial 1 \ˈstī-kō-ˌsō-shəl\ 2: relating social conditions to mental health <psychosocial medicine>
Health

“a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”

World Health Organization, 1967

“the extent to which an individual or a group is able, on the one hand, to realize aspirations and to satisfy needs, and on the other, to change or cope with the environment”

World Health Organization, 1984
Mental Health

“a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.”

Mental Illnesses include:

Anxiety Disorders (includes PTSD)  Bipolar Disorder
Depression  Suicide
Schizophrenia  Mood Disorders
Self-Injury  Violence
2 Types of Impact Assessments used in Canada

“An integrated EIA, which combines health, social, economic, cultural and psychological well-being as well as the physical, biological and geochemical environments, provides a holistic understanding of the complex interrelationships between the human and natural environments that are key to health” (Kwiatkowski & Ooi, 2003)
## Impact Assessments (IAs)

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Description</th>
<th>Used For</th>
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</thead>
<tbody>
<tr>
<td>Health Impact Assessment (HIA)</td>
<td>Procedures, methods and tools that judge the potential effects on the health of a population, and their distribution</td>
<td>Policies, Programs, or Projects</td>
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<tr>
<td>Environmental Impact Assessment (EIA)</td>
<td>Process to predict the environmental effects of proposed initiatives before they are carried out</td>
<td>Projects</td>
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<tr>
<td>Strategic Environmental Assessment (SEA)</td>
<td>Systematic, comprehensive process of evaluating the environmental effects of a proposed policy, plan or program and its alternatives</td>
<td>Policies, Programs, or Plans</td>
</tr>
<tr>
<td>Risk Assessment (RA)</td>
<td>The use of the factual base to define the health effects of exposure of individuals or populations to hazardous materials and situations</td>
<td>Exposure to substances</td>
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### IAs – Values and Data Used

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Values and Data Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Impact Assessment (HIA)</td>
<td>• Democracy, Equity, <strong>Sustainable development</strong>, Ethical use of evidence</td>
</tr>
<tr>
<td></td>
<td>• Quantitative and qualitative: Scientific data and stakeholder input</td>
</tr>
<tr>
<td>Environmental Impact Assessment (EIA)</td>
<td>• Integrity, Utility, <strong>Sustainability</strong></td>
</tr>
<tr>
<td></td>
<td>• Quantitative and qualitative</td>
</tr>
<tr>
<td>Strategic Environmental Assessment (SEA)</td>
<td>• <strong>Sustainable development</strong></td>
</tr>
<tr>
<td></td>
<td>• Quantitative and qualitative</td>
</tr>
<tr>
<td>Risk Assessment (RA)</td>
<td>• Scientific Rigour</td>
</tr>
<tr>
<td></td>
<td>• Quantitative only</td>
</tr>
</tbody>
</table>

*Four types of risk assessment used in Canada, Comparative Table, ncchpp 2010*
Determinants of Health

- Physical Environments
- Education
- Healthy Child Development
- Biology and Genetic Endowment
- Health Services
- Income and Social Status
- Social Support networks
- Employment and Working Conditions
- Personal health practices and coping skills

Canadian Handbook on Health Impact Assessment (HC, 1999)
Traditional RA Approach

Receptor
- Toddler
- 16.5 kg

Pathway
- Soil ingestion
- 80 mg/d

Contaminant
- Arsenic in soil
- 100 mg/kg

Consider Effects
- Bladder, lung, liver cancers
- Oral sf: 1.8 (mg/kg-d)^-1

Risk
- Cancer risk = Dose x Slope Factor
  > 1 in 100,000
- Hazard quotient = Dose / TRV
  > 1
Looking at the WHOLE picture...
3 Psychological and Social Factors

“Socio-cultural well-being, is much more difficult to assess since changes in the way of life or quality of life are often subtle, occur sporadically over different time spans and affect individuals differently. Consequently, indicators reflecting social well-being as it relates to health in EA are still in the developmental stage.”
Psychological Reactions

- Fear
- Anger
- Distrust
- Grief
- Sense of Depersonalization
- Feelings of Vulnerability and Powerlessness
- Frustration
- Isolation
- DEPRESSION


A product of the former Risk Communication and Public Involvement group at Health Canada
Some Context...

- **Operational Stress (PTSD)**
  - *Leadership and Operational Stress in the Canadian Forces* (Dr. Allan D. English, Canadian Military Journal, Autumn 2000)

- **Arsenic Exposure**

- **Sydney Tar Ponds**
  - *The Tar Ponds kids: Toxic environments and adolescent well-being* (Canadian Journal of Behavioural Science; Jan 2002; 34, 1)

- **Psychological Factors Affecting Health After Toxicological Disasters**
  - *Clinical Psychology Review, Vol. 17, No. 4, pp. 359-374, 1997*
Social Factors

- Economic Concerns
- Community Conflicts
- Cultural Concerns
- Community Relocation

Residents of the Stony Point reserve were forced to leave when the federal government built Camp Ipperwash in 1942. They were relocated to the Kettle Point reserve. Their land is currently being transitioned back...
Chippewas of Kettle and Stony Point First Nation

What has DND heard in their consultation to date:

• it is time for DND to clean up the site
• occupying the land is the most important thing
• some are unlikely to believe in the findings of DND studies
• the vegetation in the ranges are contaminated and not suitable for traditional medicinal practices
• the lakes used to be more abundant in fish size and varieties than now
• concern about the ecological health of the property as a whole is prevalent
• hunting, fishing, tree harvest and medicinal plants are extremely important to KSPFN members.
Chippewas of Kettle and Stony Point First Nation

“There is little reason for people to believe DND, or me in particular, there is just so much to overcome. It is a broken trust, on many levels and for many reasons, and all of it personal and unique. How to bridge it is a unique challenge that I am committed to do my best to work with the community to address.”

Pam Cushing, DND PM
Giant Mine Remediation Project

Giant Mine Working Group

08-09 July 2015 Meeting Summary

APPENDIX G - OUTLINE OF SCOPE FOR ASSESSMENT OF INDIRECT STRESS EFFECTS OF POTENTIAL ARSENIC EXPOSURE [DR. K. SHANKARDASS]
Proposed Study Approach

• Assessment of emotional and perceived psychological stress
• Assessment of specific sources of perceived stress
• Assessment of coping behaviours and related resources, and other manifestations on human health
Proposed Way-Forward

First Nations University of Canada, Regina, Saskatchewan
Recommendations (1)

- Anticipate, Plan, and Consult
  - Identifying and assessing important psychosocial factors affecting residents
  - Helping residents voice and present their concerns
  - Setting up appropriate psychosocial educational support activities for all age groups
Recommendations (2)

• Ensure Transparency
• Recognize and Respect Local Expertise
• Facilitate Communication within the Community
• Focus on Education
• Be Specific and Flexible
Questions?

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