Supplemental Materials

Database Search Terms and Results

Search History – May 8, 2014
Database: **Ovid MEDLINE**(R) <1946 to April Week 5 2014>
Search Strategy:
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1 (risk adj2 (assessment* or analys*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (199988)
2 exp Risk Assessment/ or risk assessment.mp. (189599)
3 1 or 2 (201925)
4 water.mp. or exp Water/ (562529)
5 groundwater.mp. or exp Groundwater/ (10264)
6 4 or 5 (564267)
7 exp Health/ or health.mp. (1835151)
8 3 and 6 and 7 (2603)
9 limit 8 to (english language and yr="2000 -Current") (2218)
****
Database: Ovid MEDLINE(R) <1946 to April Week 5 2014>
Search Strategy:
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1 (risk adj2 (assessment* or analys*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (199988)
2 exp Risk Assessment/ or risk assesment.mp. (175843)
3 1 or 2 (201926)
4 water.mp. or exp Water/ (562529)
5 groundwater.mp. or exp Groundwater/ (10264)
6 4 or 5 (564267)
7 exp Health/ or health.mp. (1835151)
8 3 and 6 and 7 (2603)
9 limit 8 to (english language and yr="2000 -Current") (2218)
****
Database: **Embase Classic+Embase** <1947 to 2014 May 07>
Search Strategy:
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1 (risk adj2 (assessment* or analys*)).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] (394871)
2 risk assessment.mp. or exp risk assessment/ (343254)
3 1 or 2 (394871)
4 water.mp. or exp water/ (823914)
5 groundwater.mp. or exp ground water/ (21259)
6 4 or 5 (825148)
7 health.mp. or exp health/ (2676374)

8 3 and 6 and 7 (4358)
9 limit 8 to (english language and yr="2000 -Current") (3509)
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Database: **Global Health**
Search Strategy:
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1 (risk adj2 (assessment* or analys*)).mp. [mp=abstract, title, original title, broad terms, heading words] (26366)
2 risk assessment.mp. or exp risk assessment/ (22755)
3 1 or 2 (26366)
4 exp water/ or water.mp. (81998)
5 groundwater.mp. or exp groundwater/ (3695)
6 4 or 5 (82096)
7 health.mp. or exp health/ (276768)
8 3 and 6 and 7 (1811)
9 limit 8 to (english language and yr="2000 -Current") (1631)
****

Scopus
Search Strategy from ProQuest
May 08 2014 15:11
Set#
Searched for
Databases
Results
S1
all(risk NEAR/2 assessment* OR risk NEAR/2 analys*) AND all((water OR groundwater)) AND all(health)
ProQuest Public Health
2590°
S2
(all(risk NEAR/2 assessment* OR risk NEAR/2 analys*) AND all((water OR groundwater)) AND all(health)) AND la.exact("English") AND pd(>20000101)
ProQuest Public Health
2538°
S3
((all(risk NEAR/2 assessment* OR risk NEAR/2 analys*) AND all((water OR groundwater)) AND all(health)) AND la.exact("English")) NOT stype.exact("Newspapers") AND pd(>20000101)
ProQuest Public Health
2105°
° Duplicates are removed from your search and from your result count.

NOTE: When proquest search run, the numbers come out differently. However, once the last page of results is loaded, the final numbers to change to those above and the export contains 2105 records. The initial results are shown below for completeness:
Set#
Searched for
Databases
Results

S5
(all(risk NEAR/2 assessment* OR risk NEAR/2 analys*) AND all((water OR groundwater)) AND all(health)) NOT stype.exact("Newspapers") AND pd(>20000101)
ProQuest Public Health
2175

Full-Text Review Categorization

THEMES	CATEGORY	DEFINITION/EXAMPLE (if applicable)
Publication Type (choose one)	Journal	Peer reviewed journal
	Conference Paper/Proceeding	Conference document not published
	Thesis	Masters/PhD
	Non-peer reviewed article	Government, public document, opinion paper, etc.
	Other (describe)	Other category of publication
What is the publication year?	Year published	Year of publication
Does the journal/article fit into one of these categories? (choose all that apply)	Human Health, Health and Social Sciences, Social Sciences, Toxicology, Epidemiology, Agriculture, Engineering, Medicine, Environmental/Resource Management	Based on journal title, scope of journal, and/or content of the paper
	Unspecified	Unable to determine the research category
	Other (describe)	Other research field
What is the application of the HHRA? (choose all that apply)	Hypothetical/Theoretical	Method paper, randomly generated data, etc.
	Observational/Field study	Field data is collected or historical data used in 'real life' context
	Unspecified	Unable to determine the application
	Other (describe)	Other application of the HHRA
What is the scope of the HHRA? (choose all that apply)	Integrated Risk Assessment (wide scope)	Ecological & human assessment of risk which may include socio-economic components (Bridges 2003; Sekizawa & Tanabe 2005; WHO/IPCS 2001)
	Human Health Risk Assessment	Only human health risk assessment conducted
	Holistic	Considers non-traditional factors that may influence overall risk; includes non-traditional data integration (Arquette *et al.* 2002; Bridges 2003; Serre *et al.* 2003). Does not include the mention of non-traditional factors or interpretation of risk relative to non-traditional data but rather data that contributes quantitatively to the overall determination of risk.
	Other (describe)	Other risk assessment scope was used
How is the study described by the authors? (choose all that apply)	Human Health Risk Assessment	"…is the process to estimate the nature and probability of adverse health effects in humans who may be exposed to chemicals in contaminated environmental media, now or in the future." (United States Environmental Protection Agency (US EPA 2015)

	Risk Assessment	"The probabilities and consequences of adverse events are assumed to be produced by physical and natural processes in ways that can be objectively quantified by risk assessment." (Slovic 1999).
	Health (Risk) Assessment	Risk assessment as defined by Ware (1987) with the broad scope of 'health' and all of its dimensions as identified by Ware (1987) - physical, mental, social function, role function, general health perceptions but more than absence of disease but "presence of well-being" (Slovic 1999; Ware 1987).
	Not Reported	Authors don't describe the study in any terms
	Other (describe)	Other study description
What method of HHRA was used? (choose one)	Stochastic/Probabilistic	"Risk assessment that uses probability distributions to characterize variability or uncertainty in risk estimates with the outcome described as a probability distribution rather than a single number" (US EPA 2001). Chowdhury *et al.* (2009) provide examples of methods.
	Traditional/Deterministic	Outcomes described with a single number (Health Canada 2010)
	Both	Both probabilistic/stochastic and deterministic methods used
	Unspecified	Unable to identify the method used
	Other (describe)	Other method of HHRA used
Was a standard method used? (choose all that apply)	Health Canada, US EPA, WHO	Standard national or international HHRA method
	Unspecified	Unable to determine method used
	Other (describe)	Other method referenced
Geographic Location	Country	State the country
	Undetermined	Unable to identify the country in which the research was conducted
What is the drinking water source? (choose all that apply)	Ground	Well of any type (e.g. shallow, deep, GUDI, hand-dug, drilled, bored, etc.)
	Surface	Lakes, rivers, streams, dugouts
	Rain collection	e.g. Roof top
	Cistern	Water hauled from any of the above sources
	Bottled	e.g. commercial or regulated bottled water (i.e. bottled water from a government or private treatment facility)
	Undetermined	Unable to identify the water source
	Other (describe)	Other drinking water source
What is the drinking water type? (choose all that apply)	Treated	Subject to regulated treatment
	Not-Treated	Private or unregulated/unknown treatment
	Unspecified	Cannot identify if source is treated or not
	Other (describe)	Other drinking water type
What data informed the	Water source tested	As outlined in Health Canada's Guidance on peer review of HHRA for federal contaminated sites in

risk assessment? (choose all that apply)		Canada (Health Canada 2010b).
	Proxy tested	e.g. bio-indicators
	Predicted/extrapolated	Prediction modeling or extrapolation
	Based on historical data	Not based on current data but pre-existing information
	Unspecified	Cannot identify data type
	Other (describe)	Other data source
How is the community defined? (choose all that apply)	Cultural/Spiritual	FN, Aboriginal, Indigenous, language, ethnicity
	Geographic	Country, city, town, province, etc.
	Topographic	Watershed
	Unspecified	Unable to identify the community
	Other (describe)	Other definition for the community
What is the population of concern? (choose all that apply)	Urban	As defined by the study and the country in which it was conducted. This is the approach the United Nations takes and the World Bank defines 'rural' when comparing different countries (United Nations 2015).
	Rural	Responsible for establishing source water, not receiving centralized, distributed, treated, and regulated water (e.g. farms, villages, hamlets, private well owners, etc).
	Remote	Geographically isolated or too far from urban centres to receive treated, regulated, distributed water.
	Both	Both urban and rural communities studied
	Unspecified/Undefined	Unable to determine or define the population the population accurately the way it is described by the authors
	Other (describe)	Other description of the population
What are the hazards identified? (choose all that apply) *do not interpret, only answer with reported info	Chemical (natural)	e.g. associated with natural geological characteristics to which the water is exposed
	Chemical (anthropogenic)	e.g. human induced, agricultural, industrial, etc.
	Microbiological/Pathogen	bacteria, protozoans, viruses
	Radiation	e.g. radon, uranium
	Undefined	Unable to determine the hazard
	Other (describe)	Other hazard identified
Who are the receptors? (choose all that apply)	Responsible for Source Water	Receptor is responsible for point of use water quality
	First Nations/Aboriginals	Native/Indigenous populations
	Infants, toddler, child, teen, adults, or senior	Age categories or as described in the study
	General Public	Paper states or describes the general population without distinguishing any age group in particular

	Local Residents	People in the area that may be exposed to the hazard
	Local Farmers and their families	Specifically described as farmers and/or their families
	Employees	People exposed through work place
	Any of the above without age identified?	Note if any of the above did not have the specific age or age category defined
	Undefined	Unable to determine the receptors
	Other (describe)	Other receptor identified in the study
What are the exposure pathways? (choose all that apply)	Oral, dermal, inhalation	Exposure pathways as described by Health Canada (Health Canada 2010b)
	Undefined	Unable to determine exposure pathway
Was uncertainty acknowledged? (choose all that apply) *was it at least discussed	Sufficiency of sampling, analytical detection limits, data gaps, QA/QC, seasonal/environmental factors	(Health Canada 2010a) identifies these areas of potential uncertainty for discussion.
	Quality of historical use information to identify chemicals of potential concern	Relevant if exposure was determined using estimated or historical data.
	Was there a section addressing uncertainty?	An explicit section of the paper was dedicated to addressing uncertainty associated with the risk assessment.
	Other (describe)	Other source of uncertainty identified
What other factors were acknowledged? (choose all that apply) *discussion only	Risk perception	Perception of water or risk associated with any aspect of drinking water
	Economic	e.g. income levels, etc.
	Social	e.g. education, gender, etc.
	Cultural/Spiritual	e.g. homelands, historical use, generational, etc.
	Undefined	Unable to identify other factors acknowledged in the risk assessment
	Geography	Geography is mentioned as influencing exposure to hazards or identifying receptors
	Other (describe)	Other factor acknowledged in the risk assessment
What other factors were applied in the RA? (choose all that apply) *is represented by data	Risk perception	Perception of water or risk associated with any aspect of drinking water
	Economic	See Economic – What other factors were acknowledged?
	Social	See Education – What other factors were acknowledged?
	Cultural/Spiritual	See Cultural/Spiritual – What other factors were acknowledged?

that is included in risk assessment analysis	**Geography**	Geography data is used to determine areas of increased risk or comparison of regions
	Undefined	Unable to determine if a factor was applied to the risk assessment
	Other (describe)	Other factor applied in the risk assessment
What were the results of the assessment? (choose all that apply)	Exposure assessment, hazard/toxicology assessment, hazard quotient	As outlined in HC Guidance on peer review of HHRA for federal contaminated sites in Canada (Health Canada 2010b).
	Epidemiological assessment/analysis	Use of epidemiological studies in the evaluation/setting of microbiological guidelines for recreational water, wastewater re-use, and drinking water. As defined by Blumenthal *et al.* (2001) not Ryan (Ryan 2003) in which epidemiological information informs a full risk assessment.
	Qualitative assessment	Differs from quantitative because conclusions are based on 'hazard qualitative description and potency' not DNELs, and risk characterization is justified not calculated (European Chemicals Agency 2012).
	Other (describe)	Other result was provided
Did the journal/article conclude the risk assessment? (choose one)	Yes, quantitatively.	Quantitative result - has a quantified result stating there is a risk
	Yes, qualitatively.	Qualitative result - has a description identifying a risk.
	Yes, both quantitative & qualitative	Both qualitative and quantitative conclusions were made
	No	No conclusion was made by the authors
	Undefined	Cannot determine if there is a conclusion or not
	Other (describe)	Other conclusion was provided
What gaps in the literature are identified?	Literature gaps	List gaps in research as identified by the authors
	Describe literature gaps	

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