

Meeting of the Steering Group for the Development of North American Indicators of Children's Health and the Environment

9-10 December 2002

**Commission for Environmental Cooperation (CEC) of North America
393 rue St. Jacques Ouest, Suite 200, Room A
Montreal, Quebec, Canada**

Meeting Summary

Agenda Item 1. Welcoming Remarks

Mr. Doug Wright, Director of Programs at the Commission for Environmental Cooperation (CEC), opened the meeting and welcomed the participants. All participants introduced themselves.

Agenda Item 2. Review of the Agenda and Meeting Objectives

Erica Phipps, Program Manager of the CEC's Children's Health and the Environment initiative, reviewed the provisional agenda and meeting objectives, and the agenda was adopted.

Agenda Item 3. Background and Rationale for the North American Children's Health and the Environment Indicators Initiative

Erica Phipps outlined the history of the project. It began with informal discussions between the International Joint Commission (IJC) and the Secretariat of the CEC on topics of common interest. In September 2001, an initial planning meeting was held including participation from PAHO, the WHO, the IJC Health Professionals Task Force (HPTF), country representatives, and the CEC. The meeting confirmed that there was interest for this particular project, and a willingness to collaborate. The project was subsequently included in the CEC's *Cooperative Agenda for Children's Health and the Environment in North America*, which states that the purpose of the indicators report is "to provide decision-makers and the public with periodic, understandable information on the status of key parameters related to children's health and the environment in North America as a means of measuring and promoting change".

Agenda Item 4. Update on Relevant International Initiatives

Dawn Walker of the Canadian Institute of Child Health (CICH) described recent outcomes of the World Summit on Sustainable Development (WSSD) meeting in Johannesburg including the Health and Environment Linkages program and HECA, the Healthy Environments for Children Alliance. She noted that there is good momentum to move these programs forward. She also noted that there is to be a meeting held soon of the African Nations Health and Environment Ministers as well as a meeting of physicians in this region concentrating on child health.

Steering Group Meeting Summary

Ed Chu of the US Environmental Protection Agency (USEPA) mentioned the production of a “State of the Environment” report by the USEPA that will be released shortly. It will include a section on children’s environmental health indicators and a technical document covering 150 different indicators. He then mentioned a recent meeting convened by WHO’s European Office and the European Environment Agency in Copenhagen where it was agreed that the DPSEEA (Driving Force, Pressure, State, Exposure, Effect, Action) and MEME (Multiple Exposures, Multiple Effects) models are a good starting point for indicator reports. The MEME model represents a modification of the DPSEEA model in order to emphasize multiple links between exposures and health effects. The group referred to the description of the DPSEEA model given by Mr. Chu and agreed that the description of the DPSEEA model in the feasibility study developed for this project would need to be updated.

Mr. Chu gave a brief presentation on the issues discussed in Copenhagen, including:

1. Project scope, including a definition of the environment and the age group;
2. Emphasis on action or policy indicators;
3. Criteria for selection of indicators and communicating the selection process;
4. Flexibility in the choice of indicators
5. Criteria for indicator selection; and
6. Economic indicators.

Mr. Chu pointed out the importance of identifying the scope of these reports, for the US State of the Environment report as well the CEC project.

Eva Rehfuss of the World Health Organization (WHO) noted that she would be discussing the frameworks in more depth later in the meeting. She remarked that the European indicators initiative had adopted the MEME model at the recent meeting in Copenhagen.

Erica Phipps pointed out another project within the CEC’s Cooperative Agenda that will result in a series of reports on the economic impacts of selected environment related illnesses in children. The first report will be on the economic impacts of asthma and respiratory diseases.

Pierre Gosselin of the IJC HPTF and the WHO/ PAHO (Pan American Health Organization) Collaborating Centre in Quebec, updated the group on the CHELAC (Children’s Environmental Health in Latin America and the Caribbean) initiative of PAHO. This initiative focuses on the biophysical components of the environment including the following five areas:

1. Water resources, water quality and sanitation
2. Indoor and outdoor air quality
3. Heavy metals
4. Pesticides
5. Climate change

He suggested the possibility of using some of these areas to guide the development of the current indicators project.

Risa Smith of Environment Canada mentioned a recent meeting in Chile on health and the environment indicators in air. She noted that they had looked at exposure of children by attaching monitors to the children, and found the exposures to be much higher than would be expected from monitoring data on ambient levels of pollutants.

Steering Group Meeting Summary

For the WSSD Type II initiative on international indicators of children's health and the environment, Eva Rehfuss noted that they are currently defining the short and long term goals, looking at existing databases, and working with UNICEF on this effort.

Criteria for Selection of Indicators

The group then discussed the criteria for selection of indicators and agreed that the selection of indicators must be:

- a) based on sound science;
- b) linked to children's health and the environment; and
- c) based on information that already exists since it cannot be assumed that governments will be able to commit resources for collecting new data.

Dr. Irena Buka, Chair of the CEC's Expert Advisory Board on Children's Health and the Environment, suggested that due to the importance of neurodevelopmental disorders and the possible links to the environment, something should be included in the report on this subject. Risa Smith suggested that since the link is nonlinear and there is most likely not comparable data on this possible indicator from the three countries, information could be presented in a text box as a forward looking item or early warning signal.

Agenda Item 5. Overview of Feasibility Study

Don Houston reviewed the feasibility study prepared by CICH, the consultant for this project. He noted that it is possible to have a set of indicators that describe the condition of children's health and the environment for all of North America if we use a flexible framework that facilitates comparisons, enables tracking of changes, documents the differences in data collection and availability in the three countries in detail, and highlights possible strategies to fill the gaps in knowledge. He outlined the priority areas of air quality and respiratory diseases, lead, toxics and water contamination. He then described the possible frameworks addressed in the feasibility study including DPSEEA, media/exposure/health, and the proposed implementation approach (referred to in the draft feasibility study as the "layered approach"). The layered approach was presented with the following eight points:

- 1) Agree upon priorities
- 2) Articulate indicator set for State, Exposure, Effects and Actions
- 3) Gather data: need not be identical fully documented
- 4) Allow use of proxy
- 5) Interpret available information
- 6) Grow towards harmonization (technical and financial resources permitting)
- 7) Go as deep as possible while encouraging catch-up
- 8) Perform continual (re)assessments

The group discussed which framework would be used for this project. They agreed to use the MEME framework to develop the indicators and the "Layered approach" more as the implementation strategy. Ed Chu suggested using WHO wording to be able to use the report for other international initiatives, and suggested that one of the goals should be to develop a common set of broad indicators. Eva Rehfuss proposed that the CEC initiative use WHO's

indicator profile template for the development of indicators to ensure further consistency between various international and regional efforts (see Annex).

Agenda Item 6. Session 1: Objectives and Target Audience for the Report

Erica Phipps reviewed the objective as stated on page 19 of the Cooperative Agenda.

“To provide decision-makers and the public with periodic, understandable information on the status of key parameters related to children's health and the environment in North America as a means of measuring and promoting change.”

The group agreed to this objective and then discussed the target audience for the report. The group agreed that the main report should be targeted to the general public and policy makers, and should be written in clear and simple language. It should contain suggestions for prevention and tips on how the public themselves may act to avoid or reduce environmental risks to their children's health. It must be accessible and interesting to the reader, including references to useful websites. The report should seek to avoid, as much as possible, pointing blame at any actor or group. It should be developed in such a way that it does not advocate any one opinion or perspective.

It was agreed that another document would be prepared to provide detailed information on the methodologies and data, for scientists and others who work in the field. This document should be printed for distribution as well as posted on the web.

Discussion on Action Indicators

The group discussed the topic of action indicators. It was agreed that a report like this can go a long way to empowering the public to act and that the public wants information on how they can participate. It was noted that using individual action indicators may be complicated as data bases do not widely exist for these. The group proposed the use of action indicators to guide policy makers and the use of illustrative examples for the public. In an area where clear individual action indicators exist, and where data are available, individual action indicators may be used. The group agreed they must be flexible on this matter. Don Houston suggested that using data from Environics or Datalink might be helpful to populate the action indicators. Eva Rehfuess suggested looking at using the rate of change in an action indicator rather than the simple existence of policies.

The following suggestions were made regarding the dissemination and distribution of the report:

- Hold press events to target specific audiences;
- Focus on the general public, recognizing their role in influencing decision makers
- Focus on health professionals and their education systems;
- Focus on the presentation of the facts to motivate the public; and
- Focus on municipal decision makers and other government officials for local actions.

Ed Chu suggested that generic state indicators not be used, as they do not directly relate to children. Pierre Gosselin suggested using these types of indicators and analyzing how they affect children.

Agenda Item 7. Session 2: Scoping Issues

Definition of the Environment

Erica Phipps noted that currently there is no definition of environment in the feasibility study, but rather there is a paragraph that describes the four priority areas as described by the Cooperative Agenda.

Eva Rehfuss noted that WHO's effort on indicators for children's health and the environment does not give a definition either, but focuses on the physical rather than the psychosocial environment. It was noted that if a strict definition of the environment was included, it might close some doors in the future. It was suggested to list the four priority areas of the CEC Cooperative Agenda and specify how these four areas affect children's health. The group agreed to this.

Definition of Environmental Health

Eva Rehfuss noted that WHO does not include the psychosocial environment in its definition of environmental health, as other groups are looking after this. She noted a comprehensive definition by Smith, et al. and suggested it be considered for the report [The group later decided this definition was too long to include in the report].

Environmental health is referred to in a footnote on page 2 of the feasibility study. The group agreed to use this definition but remove the preface "for the purpose of this report."

Dr. Irena Buka pointed out that the definition in the draft is very close to the Pew Foundation definition.

Action Item: Dr. Buka will send the Pew definition to the Secretariat for circulation to the Steering Group. Steering Group members will provide their opinions on whether this definition should replace the current one. Erica Phipps will then modify the study to reflect the recommended changes.

Health Endpoints/Areas of Focus

The group discussed the possibility of using heavy metals as an area of focus rather than lead alone. Although the proposed topics of focus were originally selected based on the Cooperative Agenda, the group agreed that these topics could be recast to be more encompassing. Specifically, it was agreed that lead would be covered under the category of toxics rather than as a separate section.

In order to best reflect the interests of all of the partners in this project, it was decided that the categories would be modified to:

1. air quality
2. water quality
3. toxic substances

This will also allow the indicators to change over time according to the changing interests of the partners, governments and public.

Steering Group Meeting Summary

Pierre Gosselin gave a presentation on the global burden of disease outlining the total impact of disease and injury on the population and comparing the impacts of different diseases, risk factors, and interventions that affect different populations.

His presentation introduced the concept of Quality Adjusted Life Years (QALY) as the number of fully healthy life years lost to a particular disease or risk factor, and the Disability Adjusted Life Year (DALY) comprised of the years of lost life (due to mortality) plus the years lost due to disability (due to injury and illness). Global and national burden of disease databases have now been developed all over the world.

Dr Gosselin also outlined the Comparative Risk Assessment Project organized by WHO. This study looks at disease, injury, and death due to major risk factors calculated by age, sex, and for 14 regions. He noted that the risk factors looked at in this report that relate to the North American children's health and the environment indicators project include:

- Lead (Pb)
- Water/hygiene/sanitation
- Climate change
- Indoor air pollution
- Urban outdoor air pollution
- Occupational hazards (several types).

The results of this study are available online at <http://www.who.int/whr/en/>.

The group discussed possible additional areas of focus for the indicators report. The following topics were proposed for consideration:

- Indoor air quality including environmental tobacco smoke and the burning of biomass fuels and coal
- Occupational exposures during pregnancy
- Water quantity or water availability
- Climate change
- Death rates and injury rates relating to extreme weather events with a focus on levels of emergency preparedness
- Sub-populations at risk e.g. women of childbearing age

The group discussed the question of including indicators on climate change. A proposed focus of the climate change issue would be emergency preparedness. The group decided that although this was an important topic, the science relating it to children's health and the environment was not linear. It was agreed to place this topic in a "parking lot" of topics to be revisited in the future.

Risa Smith pointed out that although there are no strong indicators for climate change and children's health and the environment, traditional ecological knowledge (TEK) could be used to highlight emerging issues. The group supported using this type of data to highlight examples (e.g. in text boxes).

The group also agreed that not enough information currently exists on the link between natural disasters and children's health and the environment and as such the topic of natural disasters will also be put aside to be revisited in the future.

The group asked for clarification on the relationship between water availability and children's health and the environment.

Steering Group Meeting Summary

Action Item: Risa Smith will send information to Erica Phipps regarding the relationship between water availability and children's health and the environment for distribution to the group.

Eva Rehfuess pointed out that data on six indicators for the use of biomass as fuel will be available for 73 countries (including Mexico and several other Latin and South American countries but excluding the United States and Canada) through the World Health Survey.

Erica Phipps summarized the agreed upon points. The categories will be more broadly framed as air quality, water quality and toxics. Climate change and natural disasters will be put in a "parking lot" for future reference, and water availability and traditional ecological knowledge will be reassessed during the report development phase.

Inclusion of Action Indicators

Regarding individual actions, Ed Chu presented data on the percent of homes with children under the age of 7 years where at least one person smokes. He suggested the use of this indicator in the report and noted the importance of presenting the information in a factual way so as not to imply blame.

Pierre Gosselin proposed action indicators to investigate the following:

- Participation of schools and the Ministry of Education in environmental education;
- Installation at the state and provincial level of mechanisms for gathering data on children's health and the environment;
- Existence of public health programs to promote hygiene;
- Allocation of budget for safe drinking water and water quality.

Eva noted four types of action indicators based on:

1. existence of policies
2. degree of implementation of the policy
3. degree of enforcement of the policy
4. effect of the policy

She pointed out that #2 and #4 are the most important types of action indicators to develop.

The group proposed the use of action indicators that would help to guide policy makers, and that rather than action indicators of individual behaviour, illustrative examples would be used (e.g. in text boxes). In an area where clear individual action indicators exist, however, and where data are available, individual action indicators may be used.

Criteria for Selection of Indicators

The group reviewed the criteria as listed in section 2.2.2 of the draft feasibility study and agreed to these criteria.

It was suggested that for criteria #1 "The chosen indicator must be related to a specific condition of interest or question that reveals the environmental health situation", the reference should be to the environment of children, not just the environment. The group agreed.

Action Item: The secretariat will modify the document to reflect this change.

Agenda Item 8. Session 3: Selecting the Framework

Eva Rehfuss reviewed the evolving WHO framework. The widely adopted DPSEEA framework, published in 1999, identifies a chain of processes that results in a direct link between exposure and effect, and recognizes feedback loops. However, it is a very linear approach that does not take into account multiple links, and it is difficult to distinguish between pressure indicators, state indicators, etc. The more flexible MEME (multiple exposures, multiple effects) model looks at exposures in the main settings, where children spend their time, and emphasizes multiple linkages. It also looks at the context of the indicators and takes into consideration preventative and remedial action. The two approaches are compatible but in looking at indicators of children's health and environment WHO is following the MEME model to allow for greater flexibility and to focus specifically on children.

The Layered Approach outlined in the feasibility study looks more at the process of developing indicators. It starts with scoping, defining the users and the issues, then moves to selection and the use of a framework.

The group discussed which framework to use and decided upon using the MEME model due to its flexibility. The group agreed that the feasibility study be revised so that the frameworks presented are no longer options, and to clarify that the North American report will use the MEME model. In the feasibility study, the DPSEEA model will be described as a background to the MEME model and the Layered Approach will be modified to form an implementation plan. It was suggested for ease of understanding that an explanation of how the DPSEEA framework relates to the Pressure/State/ Response model be included.

Action Item: Eva Rehfuss will send information on the MEME model to Erica Phipps for inclusion into the feasibility study. The Secretariat will revise the 'layered approach' section of the draft feasibility study into a proposed implementation plan.

The group agreed that one of the goals of the project should be working towards the development of a core set of indicators.

Discussion of Steps in the Layered Approach (Implementation Strategy)

Risa Smith suggested the following modifications to the steps:

#1. "Agree on priority concerns" should be changed to "agree on theme areas and then priority concerns"; and add

#9. Identification of gaps in information; and

#10. Comparison of actions and analysis of effectiveness.

With respect to step #5 "The interpretation of available indicator information", the group discussed the possibility of convening a small panel of experts on each area of concern to assist in interpreting the data. It was noted that it must be clarified in the report the instances where data are presented but are not comparable. It was suggested that there be users on the expert panels to ensure that the interpreted information is understandable. It was also suggested that in order to simplify the process and ensure the information is understandable, the governments will provide a synopsis of the information and the Secretariat shall provide a template for this purpose. There should be something for the panels to review for clarification, and this should be

Steering Group Meeting Summary

developed beforehand. Due to time constraints, it was suggested that the interpretations developed with the assistance of the panels be circulated to members of the public for comments, based on which the interpretations would be modified and improved as needed. Jim Houston suggested that Paul Bertram and Harvey Shear at the USEPA Region 5 office might be able to assist during the data interpretation stage.

It was also agreed that the steering group's mandate should be extended into the next phase of the project, the report development phase. PAHO, the IJC HPTF and WHO all voiced their interest in continuing to be involved.

Agenda Item 9. Session 4: Defining the Content

Erica Phipps suggested the inclusion of broad indicators in an introductory section, such as infant mortality rates, etc. It was also suggested that since childhood cancer did not have a linear relationship with the environment, it would be included in this introductory session, and broken down to include the types of cancers when possible. The group agreed to look at in the introductory section:

1. Childhood cancer mortality
2. Childhood cancer incidence
3. Statistics on the number of children living in North America
4. Low birth weight
5. Premature birth weight
6. Perinatal mortality rates

The following is a discussion on the indicators as listed in the Feasibility Study, Preliminary Final Draft, December 9th, 2002.

Topic: A) Asthma and Respiratory Disease

Indicator: A1) Exceedances based upon the air quality index that each nation uses

It was suggested here that the WHO standard be used and that the data be disaggregated as much as possible. It was also suggested to use the Brigg's indicator of "mean annual atmospheric particulate exposure", but Risa Smith pointed out this would be difficult for Canada because they are in transition around the standards. The US agreed this would be a complicated indicator to use. Ed Chu also urged the group to look at the US national air quality standards and use this indicator as a means to affect national policies.

The group discussed reporting standards and decided it would be a difficult issue to resolve but it was agreed that the report could use local standards with an explanation, and in the future move towards WHO or more stringent standards.

It was agreed that indicator A1 will not be recommended for use in the first indicators report.

Indicator: A2) Air Quality measurements (ground level ozone, PM₁₀, etc.)

The group agreed this indicator would not be used for this report, as data do not exist for these measurements in all three countries.

Indicator: A3) Percent of children exposed to air pollution exceeding WHO standards

Steering Group Meeting Summary

The group agreed to use this indicator with national data and country standards.

Indicator: A4) Number of asthma cases

The group agreed to use the “prevalence” of asthma rather than the number of cases. It was suggested that survey data be used, as hospital data may be unreliable. It was suggested that the three countries work towards development of national surveys.

Indicator: A5) Hospitalizations due to respiratory distress

The group agreed not to use this indicator as hospital data may not be accurate. It was suggested here that other upper and lower respiratory tract infections be looked at in the future.

Indicator: A6) Regulations addressing emissions of air pollutants from industrial sources and/transportation.

The group agreed to set aside this indicator for now. It is not clear whether it is better to have many regulations or fewer, more comprehensive ones. It was thought that this indicator could be difficult to interpret. Looking at hazardous air pollutants was also mentioned, with the percent of children who live in counties where estimated hazardous air pollutants exceed health benchmarks as one possible indicator for future consideration.

Indicator: A7) Programs to reduce exposure to indoor air pollutants such as environmental tobacco smoke

It was suggested that the annual rate of change of an exposure indicator was a good way to reflect progress on indoor air pollutants. The group discussed using an action indicator to reflect the annual rate of change in the use of biomass as a fuel, the change of exposure to environmental tobacco smoke and the rate of change of exceedances. Risa Smith was concerned that the rate of change in use of biomass would not reflect the effect of changes in regulations, such as the increased safety of stoves. Eva Rehfuess suggested using a proxy that allows for the differentiation based on the type of stove being used.

The group discussed the use of an indicator on indoor air quality. Ed Chu suggested using the percentage of homes with children under the age of 7 where at least one adult smokes. Antonio Barraza pointed out that this type of data does not exist for Mexico but they will attempt to get this data through the next survey which will be house to house. They do have data on the use of biomass as a fuel. It was suggested then that the two indicators be used, ETS for Canada and the US and biomass for Mexico, and anecdotal or regional information can be used to discuss such items as mold in schools.

Topic: B) Effects of Exposure to Lead including Lead Poisoning

Indicator: B1) Blood lead levels, number of children with blood lead >10 ppm

The group agreed to use this indicator and disaggregate the information to show blood levels at different levels such as: less than detectable, between detectable limit and 2.5 ppm (the new reportable level for Canada), between 2.5 ppm and 10 ppm, and greater than 10 ppm. It was suggested that the development of surveillance programs for lead be included in the report, in the discussion of data needs.

Indicator: B2) Children living in housing with lead dust above a threshold

Steering Group Meeting Summary

Because lead dust levels in homes is not known for Mexico, it was agreed to change this indicator to “Children living in housing with a source of lead above a threshold”. This will encompass lead dust as well as the lead generated from microindustries in Mexico.

Indicator: B3) Number of residences built before 1950

The group agreed not to use this indicator, as it is not applicable to Mexico.

Indicator: B4) Incidence of lead poisonings

The group agreed not to use this indicator.

Indicator: B5) Number of relevant programs designed to reduce childhood exposure to lead, according to the needs of each nation

The group agreed that the need for programs would be included in the discussion on data needs for B1 and this indicator would not be used.

Topic: C) Exposures to Toxic Substances

Indicator: C1) Birth anomalies such as neural tube defects or hypospadias

The group discussed birth anomalies related to toxic exposures. They agreed that having neural tube defects and hypospadias in the indicator would be misleading as they are not the only birth abnormalities of importance and they are also not the easiest ones to link directly to exposure to toxics. Because the causes of birth defects and neurodevelopmental problems are multifactorial, it was decided not to use this indicator but rather to use this type of information in a text box relating to traditional ecological knowledge. It was suggested that the best way to approach this subject was to acknowledge expert opinion on the subject and refer to mental retardation and/or attention deficit hyperactivity disorder and how these conditions may be related to toxics. It also was suggested that a data needs section be added to each area.

Indicator: C2) Sales of pesticides, other chemicals and

Indicator: C3) Pollutant Release and Transfer Register (PRTR) data

The group agreed to recast C2 and C3 as action indicators. The indicators would be trends in pesticides and trends in PRTR data, respectively. This is taking into consideration that sales of pesticides do not give an indication of exposure and children are disproportionately affected by pesticides. Risa Smith noted that data do not exist on pesticide residues on fruit and vegetables in Canada, but this may soon change through the Pest Management Regulatory Agency.

Indicator: C4) Fish consumption advisories

The group agreed that this was a good action indicator. Antonio Barraza noted that no data exist for this in Mexico. It was suggested that data from the US Mexico border region be used, although one may not be able to generalize this data to all of Mexico. Ed Chu also suggested using the “Percentage of women living in states with fresh water advisories for methyl mercury”.

Indicator: C5) Legislation to limit emissions of toxic substances

This indicator will not be used, but contextual information on this will be incorporated into the C3 indicator.

Indicator: C6) Number of inspections to enforce legislation

The group agreed that this indicator would be very difficult to populate for the three countries and thus decided to not recommend its inclusion in the first report.

Steering Group Meeting Summary

Given the short time remaining at this point of the meeting, the group agreed to address the indicators in Group D – Water Borne Diseases - in a conference call so they could concentrate their efforts on the outstanding agenda items that need to be discussed face to face. The results of the teleconference are provided below.

With respect to the feasibility study, Erica Phipps suggested that the text modifications suggested earlier be made, but the outcome of this meeting be presented to the public in a separate document including a final list of proposed indicators and implementation strategy, as a report of the steering group. This would enable the public to see the broader range of indicators considered in the feasibility study while making clear the steering groups recommendations. The group agreed and will review the modified feasibility study before it is posted on the web. [It was later decided to prepare a single document that would contain all three elements, i.e., the steering group's recommendations, the revised feasibility study, and the summary of the steering group meeting.]

D) Waterborne Disease (as discussed during the 18 December teleconference of the steering group)

D1) Percent of children (households) served with treated water

The group discussed this indicator as the percentage of children drinking treated water. It was thought that this indicates that treated water is the only clean water, but of course well water can also be clean, and not all treated water is clean. Don Houston suggested a sub indicator that qualifies when the treated water is known to be dirty. The US uses the number of children with access to clean water. It was suggested to use two related indicators. Eva Rehfuess suggested using an indicator of children without access to clean water, sanitation and hygiene. This would give an indication of a negative exposure and would relate more strongly to the number of diarrhoeal diseases, etc. This would also give an indication of where work needed to be done.

It was suggested to add another indicator on the number of exceedances for drinking water in the three countries as well, and to somehow characterize the treated and non-treated water. Erica Phipps enquired about the criteria for exceedances – Ed Chu responded that the group could decide on this. He noted that the data for water reporting is not of the same quality as for air. Don Houston also enquired about which standard would be used, local, national or WHO since standards differ between countries, states and provinces. It was suggested to use a local parameter currently and move towards the WHO standard in the future as for air.

Erica Phipps summarized that there would be a second indicator on the percentage of water systems in violation of local standards and occurrences of as low as once per year would be included. Don Houston suggested using the number of days in violation, and then an indicator on the number of systems exceeding, for example, 5 days. Ed Chu pointed out that we would have to look at what type of violations occur. It was agreed that this would be clarified as the indicator is developed.

Antonio Barraza noted that to obtain data on the number of days would be difficult to find for Mexico. In Mexico data exist on the number of times there are a violation, rather than the number of days.

D2) Percent of children (households) served with sanitary sewers

Steering Group Meeting Summary

This could be broadened to include latrines, septic systems etc. Ed Chu questioned what this indicator was an indicator of. Don Houston explained that this is an indicator of the probability that children are in contact with untreated sewage and the likelihood of waterborne disease. Erica Phipps suggested using an indicator of the number of children living in areas with untreated sewage. She also suggested that we put this in provisionally and let the expert review panel make a final decision based on the data generated. Ed Chu suggested the indicator be broken down to reflect the type of sewage treatment. The group agreed to use this indicator, pending the results of a “straw indicator” to see if it is working. It can be a proxy of the probability of coming into contact with contaminated water.

D3) Presence of faecal coliform in surface water

The group agreed that if we have D1 and D2, this indicator was not necessary.

D4) Number of outbreaks of diarrhoeal disease

Outbreaks are reported more than individual cases but the problem with using outbreaks is that they are usually local, whereas the information in D1 and D2 is not local information. This local indicator may not be consistent with the national indicators – there may not be a pattern. Eva Rehfuess noted that the WHO uses this indicator and feels that the issues can be dealt with during the development of the indicator. It was noted here that the indicator would be looking at outbreaks due to contaminated water – as opposed to outbreaks due to food borne disease.

D5) Morbidity (number of childhood illnesses attributed to water borne disease)

D6) Mortality (number of child deaths attributed to water borne disease)

The group agreed to use both of these indicators D5 and D6.

D7) Percent of sewage treated before release into local water bodies. – Number of sewage treatment plants per million urban population.

This would tell us about the government’s efforts to protect the public from water borne diseases. The group agreed that this indicator does not add to the report with respect to children. It was noted that D1 and D2 could be considered as action indicators for water. Eva Rehfuess noted that annual rate of change in number of households lacking basic amenities could be used. Julie Charbonneau of Environment Canada suggested the indicator be framed into the millennium declaration goal – to check the percentage of the population that has access to safe water and whether we are complying with the millennium declaration goal. It was noted that this could require comparable data sets that may be difficult for each country right now.

The group agreed to drop D7 and possibly use a rate of change indicator that would capture D1 and D2 separately.

Agenda Item 10. Session 5: Future Actions and Directions

Next Steps:

Erica Phipps noted that the CEC's Children's Environmental Health (CEH) Team, consisting of government representatives in the areas of environment and health from the three countries, would like clarification on the partnership arrangements for Phase II of the project i.e. the report development phase. Issues to be clarified include the processes for approval of the final report as well as the division of responsibility.

Jim Houston noted that this project is in the work plan of the IJC this year and that they are ready to continue support into the implementation phase in the form of advice and expertise. He noted that the CEC and IJC are developing a Memorandum of Understanding to lay out the types of support available for this and other joint initiatives.

Building on an idea raised within the CEH Team, Erica Phipps suggested that the governments may wish to develop a Council Resolution for the June Council meeting that would commit the parties to populating at least a core set of indicators.

Pierre Gosselin, speaking on behalf of PAHO, noted that PAHO is strongly interested in this project and may have some funding available for coordination. He noted PAHO's interest in sharing the results of this project in Central America.

Erica Phipps stated that the CEC has \$50 000 CAD available for coordination that will most likely go to a consultant who will pull all of the information together. She noted that ideally this would be a partnership document recognizing the collaboration. She also noted that she would like to see the continuation of this steering group into the implementation phase.

Eva Rehfuss supported the project and noted that she would continue to provide expertise on all matters and the WHO could possibly provide help with dissemination of the report.

Evonne Marzouk of the USEPA suggested that the group develop a Terms of Reference for itself to clearly outline its roles and responsibilities.

Jim Houston suggested the addition of a member of the Canadian Medical Association or the National Association of Physicians for the Environment to the steering group.

Doug Wright suggested the drafting of a two pager on the evolution of the partnerships for this project and a proposed path forward for Phase II including a Terms of Reference or operating procedures for the steering group.

Action Item: Erica Phipps will draft such a document and circulate it to the group for comment.

Erica Phipps also suggested the invitation of a representative of indigenous groups onto the steering group. The group agreed to discuss the invitation of new members further on the next conference call.

**Annex 1: CHILDREN'S ENVIRONMENTAL HEALTH INDICATORS:
TEMPLATE OF INDICATOR PROFILES (WHO)**

Brief title (banner heading) of indicator		Type of indicator: Exposure/Health Outcome/Policy
INDICATOR PROFILE		
<i>Setting</i>	Lists environmental settings (general, home, neighbourhood, food, drinking water, ambient environment) to which indicator relates	
<i>Issues in indicator design</i>	Outlines conceptual and practical issues that need to be considered in designing an indicator in this area.	
<i>Rationale and role</i>	Outlines the justification for the indicator and describes the main settings and issues for which it is relevant.	
<i>Description</i>	Gives a generic definition of the indicator, outlines possible methods for defining the indicator, and for each suggests sources of data. Where appropriate, indicates the advantages and disadvantages of different methods and definitions.	
<i>Example</i>	Lists similar or related indicators, proposed or developed as part of other indicator sets (e.g. UN Indicators for sustainable development, UNCHS Urban indicators programme, WHO Catalogue of health indicators)	
<i>Sources of further information</i>	Lists agencies which have a leading role in relation to the indicator, including: data providers, indicator developers, indicator users. Includes international, national and - where relevant - regional/local agencies.	
<i>Useful references</i>	Gives full details of references and other sources of information relevant to the indicator (e.g. Web addresses, databases). Lists, in particular, references to other indicator sets using similar indicators, examples of the use of the indicator, or materials which describe the context and rationale for its use.	
RECOMMENDED INDICATOR		
<i>Definition</i>	Gives detailed definition of the recommended indicator	
<i>Terms and concepts</i>	Defines all terms and concepts involved in describing and constructing the indicator.	
<i>Data needs</i>	Lists data needed to construct indicator	
<i>Data sources, availability and quality</i>	Outlines potential sources of data, and comments on their quality and characteristics in terms of the indicator. Where appropriate indicates ways of obtaining data which are not readily available (e.g. through special surveys).	
<i>Computation</i>	Specifies the way in which the indicator is computed: i.e. how the data are analysed/processed to construct the indicator. Where relevant, expresses the computation process mathematically, and defines the terms used.	
<i>Units of measurement</i>	Specifies the units of measurement used in presenting the indicator	
<i>Worked example</i>	Gives brief worked example of how the indicator is calculated	
<i>Scale of application</i>	Specifies the potential scales of application or level of aggregation. Note that the scale specified refers to the area across which the indicator can be used; for geographic comparisons, the indicator might be developed at lower levels of aggregation. Definitions: local (within a city or community); regional (within a sub-national region); national (for a country); international (across several countries or globally).	
<i>Interpretation</i>	Describes the ways in which the indicator may be interpreted in relation to the issue(s) specified. Shows what inferences can be made from apparent trends or patterns in the indicator. Discusses, in particular, constraints on the interpretation of the indicator, due for example to limitations of the data or complexities in the relationships implied by the indicator.	
<i>Variations and alternatives</i>	Describes how the indicator might be varied or adapted to local circumstances.	