

Mining & Health

A COMMUNITY-CENTRED
HEALTH ASSESSMENT TOOLKIT



Cover Photograph
by Catherine Coumans

Prepared for the Canary Research Institute
for Mining, Environment, and Health

With generous funding provided by The Lupina Foundation

By

Catherine Coumans, Sue Moodie and Lisa Sumi

The authors would like to extend special thanks to
Rosalie Bertell, for sharing her wealth of experience and wisdom
in community health development.

MiningWatch Canada
250 City Centre Ave. Suite 508
Ottawa, Ontario
K1R 6K7
www.miningwatch.ca

September 2009

Mining and Community Health

Acknowledgements

The initial recognition of the need to develop this community-centred health assessment toolkit arose out of a meeting of individuals concerned about health in mining-affected communities at the Western Mining Action Network meeting in 2005. We came together to discuss alternatives to standard risk assessment approaches to studying health. This meeting launched the idea of working together to develop a practical health assessment method that is relevant and accessible to communities.

Much appreciation and thanks for their dedication and support goes out to these project initiators: Aimee Boulanger (EarthWorks and Women's Voices for the Earth), Catherine Coumans (MiningWatch Canada), Amy Crook (Center for Science in Public Participation), Marina Biasutti-Brown (Innu Nation), Cindy Parker (Johns Hopkins Bloomberg School of Public Health), Julie Richmond (Johns Hopkins Bloomberg School of Public Health) and Sue Moodie (CCSG Associates). Alison Geyh (Johns Hopkins Bloomberg School of Public Health) provided subsequent planning collaboration.

We were fortunate to engage reference group members and reviewers with considerable experience to contribute time and energy to the development of this project: Isabelle Aubé (Conservation

Council of New Brunswick), Rosalie Bertell (International Institute of Concern for Public Health), Harry Browne (Gila Resources Information Project), Teresa Coons (Saccomanno Research Institute), Will David, Roger Dixon (International Institute of Concern for Public Health), Ginger Gibson (University of British Columbia), Anna Godduhn (University of Alaska), Daniel Green (Sierra Club), George Haas (University of Ottawa), Ella Haley (Athabaska University), Barbara Joughin (RVU Study Group), Lori Leonard (Johns Hopkins School of Public Health), Inka Milewski (Conservation Council of New Brunswick), Marion Odell (IICPH), Sally Smith (Gila Resources Information Project), Sheena Symington (Trent University) and Ramsey Hart (MiningWatch Canada).

Catherine Coumans provided Research Coordination. Barbara Joughin provided copy editing and technical writing. Dakshina Clark provided the final graphic design, layout and production.

Finally, we extend gratitude to the Femmes Francophones de l'Ouest de Labrador, in particular Cathie Robichaud and Jennie Robichaud, and the Labrador West Status of Women Council, in particular Francis Fry and Noreen Careen, whose community-centred health project helped educate and inspire us.

TABLE OF CONTENTS

Glossary	4
Introduction	8
I GETTING STARTED	12
Step 1 – Getting Started	13
1.1 Selecting core group members	14
1.2 How is your core group going to operate?	15
1.3 Understanding health	16
1.4 Creating a common vision of community health	16
2 THE LAY OF THE LAND	18
Step 2 – The Lay of the Land	19
2.1 Determining the lay of the land	20
2.2 Gathering information from the community	22
2.3 Summarizing the information	26
3 PROJECT GOALS	28
Step 3 – Project Goals	29
3.1 Focusing project ideas	29
3.2 Brainstorming project goals	30
3.3 Choosing project goals	31
3.4 Develop indicators	32
4 STRATEGIES	34
Step 4 – Strategies	35
4.1 Learning about strategies	35
4.2 Developing your strategies	40
4.3 Brainstorming activities	44
5 ACTION PLAN	46
Step 5 – Action Plan	47
5.1 Developing your action plan	47
5.2 Reviewing and finalizing your plan	47

TABLE OF CONTENTS (continued)

6 DO IT!	50
Step 6 – Do it!	51
7 ANALYZE AND COMMUNICATE RESULTS	52
Step 7 – Analyze and Communicate Project Results	53
7.1 Analyzing your results	53
7.2 Summarizing project results	54
7.3 Communicating results	55
8 EVALUATE PROJECT	56
Step 8 – Evaluate Project	57
8.1 Evaluating your project	57
8.2 Celebrating your successes	58
TOOLBOX	59
TOOL #1 – Discussing Core Group Membership	60
TOOL #2 – What is Health?	62
TOOL #3 – Defining Your Healthy Community	64
TOOL #4 – Creating a Vision Statement	66
TOOL #5 – Web Influence Diagram	67
TOOL #6 – Mapping Community Health	71
TOOL #7 – How to Use Focus Groups	79
TOOL #8 – Information Summary Worksheet	82
TOOL #9 – Resource Summary Worksheet	84
TOOL #10 – Brainstorming Project Goals	85
TOOL #11 – Indicators	87
TOOL #12 – Health Assessment Survey	89
TOOL #13 – Data Sources	100
TOOL #14 – Environmental Sampling and Data	104
TOOL #15 – Sample Project Information Sheet	107

Glossary

Words in the text that are underlined and italicized are defined in the Glossary.

Barriers	Barriers (in this Toolkit) may be any factor that stands in the way of improving health in your community. Barriers may include specific people with influence or negative attitudes; organizations; social trends; environmental issues; or a lack of health-related services.
Biomonitoring	Body burden assessments or biological monitoring ("biomonitoring") measure the presence and concentration of chemical compounds (or their metabolites) in human biospecimens such as blood, urine, breastmilk, adipose tissue, hair, and saliva.
Chain-of-Custody	Documentation (or a paper trail) that shows that samples have not been tampered with from the time of sampling to the time of laboratory analysis. Every time the sample is transferred from one person to another, there must be some record (e.g., someone signs a form or document).
Consensus Decision-Making	Everyone in the group must agree, or decide not to block consensus, for a decision to be accepted. Pros: the decision is one that all members can live with. Cons: time-consuming and frustrating if consensus cannot be reached.
Control Group	An unexposed, or unaffected 'normal' group of people, that is similar in most other ways to a group that is being studied. For example, if you want to know if tailings dust is related to an increase in asthma among children, the study group of children might live downwind from the tailings areas, while the control group would live in an area that does not get tailings dust. Everything else about the children would be as similar as possible (go to the same school, play in the same areas, are from similar economic classes, etc.).

Core Group	The group of individuals that has come together to organize to improve community health.
Cumulative Environmental Effect	The impact on the environment that results from the impact of an activity when added to other past, present, and reasonably foreseeable future activities.
Demographics	Basic statistical information about the population of the community, such as education level, economic status, age, family information.
Epidemiological Study	Measures the health outcomes as a result of exposures, usually in large populations. Used to evaluate if past exposures may be responsible for documented health problems in a group of people.
Focus Group	A group of similar individuals who have been gathered to discuss specific topics within the community from their particular perspective (e.g., health care professionals, or mothers with children of a similar age).
Health Risk Assessment	Quantifies the probability of a harmful health outcome as a result of predicted exposure conditions or hazards. Used by government regulators to determine which potential hazards are the most significant (this may differ from a community person's opinion of what is most significant). Does not tell you if a health condition was caused by exposure to a chemical.
Indicators	<p>An indicator is a measurement, number, fact, standard, opinion, or perception that helps measure trends or progress toward achieving results.</p> <p>Indicators can be quantitative (numerical) or qualitative (descriptive) means to track change over time.</p> <p>Process indicators: Process indicators provide information on the progress of the project itself, rather than the results of the project.</p> <p>Outcome indicators: Outcome indicators provide information on progress towards the specific goals, strategies and activities laid out in your action plan.</p>

Lay of the Land	Background information that provides a picture of the community. It helps people understand the factors that may be affecting community health, such as: sources of pollution; health care facilities; social issues; education; political situation; lifestyle trends; and others.
Majority Rule Decision-Making	After every person has had a chance to voice opinions, a vote is taken on the various options. The option that receives the most votes is the one that will be selected. Voting can be by a show of hands; or by writing your vote on a piece of paper (so voting can be anonymous).
Minutes	Notes taken at a meeting. The notes may record: date, attendance, important discussions and decisions.
Op-Ed	A newspaper article, written in editorial style, that expresses the personal viewpoints of an individual. The article is attributed to that individual.
Project Goal	A statement of a specific goal you want to accomplish through your project.
Qualitative	Information that is described by characteristics or properties.
Quantitative	Information that is measured or estimated by numbers.
Random Sample	A random sample is one where the researcher ensures that each member of the population has an equal probability of being selected. This is usually done through the use of random numbers applied to a list of the entire population.
Resources	Resources (in this Toolkit) support or promote health, these could include people, organizations, physical features, buildings or services in the community services.
Strategy	A strategy is a plan that identifies goals, as well as key actors and target groups for the achievement of the goal in line with a vision.

Study Population	The group of individuals that is being studied. This group may be compared to a “control group” to determine how health outcomes might differ as a result of the health influence being studied.
Tools	In this document, tools include information designed to help the readers understand various concepts, or exercises designed to help the users accomplish various steps. Tools are found in the Section of the Toolkit entitled “TOOLBOX.”
Vision Statement	A statement describing the future community that you want to create.
Web Influence Diagrams	Web influence diagrams are a visual organization of how community health factors are interrelated and describe how different elements of health influence others, both positively and negatively.

Introduction

This Community-Centred Health Assessment Toolkit will help members of mining-affected communities assess community health and guide them in taking steps towards supporting and improving the conditions for health in their communities.

We have chosen a community-centred health assessment approach as we believe there are important benefits when mining affected communities conduct their own health assessment, set their own project goals, and act to improve their own community's health. Some of these benefits are:

- When communities do their own health assessment they investigate and learn about issues that are of greatest concern to them.
- The assessment process can provide an environment of trust in which community members are willing to share valuable knowledge and experience about the changes they are witnessing in their community.
- When community members conduct their own assessment they work with methods that they understand.
- Community members decide at what point they may want to bring in the skills of an expert and for what parts of the work, for example to assist them in data gathering, and at what point they may want to partner with an organization or institution (health, academic), for example in analyzing and interpreting their assessment results.
- Costs can be adapted to available

resources. It is possible to do a meaningful assessment and community health project with limited resources.

What is health?

The approach to health reflected in this Toolkit is a holistic definition of health with a focus on the individual's views of their own well-being, and that of their community. Health is not merely the absence of disease, but is the complete social, psychological, spiritual and physical well-being of individuals, families and communities.

Who can use this Toolkit?

This Toolkit is designed to be used by aboriginal and non-aboriginal communities where there is mining exploration or development or closed or abandoned mines.

It can also be used by individuals, support groups, or institutions (academic, health) from outside the community that may have been invited to help guide community members through parts, or all, of the health assessment and project planning process.

Communities will be at different stages of organization with respect to dealing with contamination and changes in the community brought on by mining. This Toolkit provides "Steps" and "Tools" to help communities that want to "get

organized,” but can also be used by communities that are already organized for action and are looking for practical guidance on strategies and methodologies they can use to assess their communities health, develop a project plan to address the community’s needs, or engage local or outside experts to assist them.

What can using this Toolkit do?

As community members use this Toolkit, they will start to talk about their vision of a healthy community, and identify various factors that influence health in the community. They will also be able to start, or enhance, a community-based discussion and assessment of the state of community health and how it may be influenced by mining in, or near, the community. They will be able to make a plan and develop priority strategies to support and improve community health, bringing them closer to their vision of a healthy community.

This Toolkit provides a variety of “tools” that will help community members take steps to improve health, including forming a core working group; thinking about requirements for a healthy community; assessing known and suspected mining-related contamination and changes to individual and community health and how these relate to other factors that influence health within the community; and designing a health project to respond to known concerns and address the information gaps that are worrying

community members. The Toolkit also provides guidance on communicating the results of the health project back to the wider community.

Community members using this Toolkit may be able to:

- Create a more active community discussion about health.
- Increase ability for research and data gathering.
- Build or expand relationships with media, elected officials, unions, health professionals, industry representatives, regulators.
- Feel more empowered to improve community health.
- Use the information gained in the health assessment phase to seek collaborative partnerships with specific experts or institutions for parts of the health project phase.

Is this community-centred health approach the same as an epidemiological study or a health risk assessment?

This Toolkit does not take the approach of a large-scale *epidemiological study*, or *health risk assessment*. It does not rely on outside experts, as these approaches do, and it does not limit what aspects of health can be discussed or explored, as these approaches do.

Large-scale epidemiological studies require large populations. This makes these studies time consuming and expensive. It also means that this

approach cannot be used in small communities.

Health-risk assessments rely on experts' decisions about what risks are acceptable. Communities may not agree with these decisions.

The methodology of this Toolkit can be applied in small communities. It does not rely on outside experts. Any and all aspects of health that are of concern to community members can be assessed and addressed, and costs can be adapted to the resources the community has available, or can raise.

Notes About the Toolkit

The Toolkit is divided into eight sections or "steps."

Words in the text that are underlined and italicized are defined in the

Glossary, located at the beginning of the Toolkit.

A number of Tools are included to provide additional information and guidance on some of the concepts discussed in the text. These Tools are located in the attached document – "The Toolbox."

Help make this Toolkit even better!

We provide some Steps and Tools for a community-centred approach to improving health in mining-affected communities. We hope that you will use this toolkit, and that you will let us know how we can improve it. Maybe you know of additional tools, fact sheets, handouts or resources that we can add. If you have an idea, let us know!

Contact MiningWatch Canada:
613.569.3439, info@miningwatch.ca

ADDITIONAL RESOURCES



- For a good example of small-scale epidemiological studies, sometimes called "popular epidemiology" or "bare-foot epidemiology," which have a similar approach and philosophy to this Toolkit, see: *Methods to Help Communities Investigate Environmental Health Issues* by Ella Haley, 2005.
http://www.pimatisiwin.com/Articles/3.IB_EnvironmentalHealth.pdf
- For further information and resources on community-based research, in particular in partnership with universities, visit the Community-Based Research Network of Ottawa web site:
http://www.spcottawa.on.ca/CBRNO_website/home_cbrno.htm
- For a resource for aboriginal communities, see *Community Health Needs Assessment: A Guide for First Nations and Inuit Health Authorities*.
http://www.hc-sc.gc.ca/fnih-spni/pubs/home-domicile/2000_comm_need-besoin/index_e.html
- "Mining and Health" Chapter 21 in *A Community Guide to Environmental Health* by Jeff Conant and Pam Fadem. 2008.
http://www.hesperian.org/publications_download_EHB.php

NOTES

1

GETTING STARTED



Step 1
GETTING
STARTED



Select members of your core planning group

Decide how the core group will operate

Create your vision of a healthy community

STEP 1 – GETTING STARTED

You live in a mining community. Maybe you live near an active mine, or in an area where a company is conducting exploration activities, or near an abandoned or closed mine. You and others have seen changes in your community and suspect that the mine or mining operation may be having negative effects on your community's health.



to convince the mining company to do something to reduce dust from the mine or exploration site.

But do you really know if these are the most important issues affecting community health? And are these the best activities for creating real and lasting improvements to health in your community?

If the mine is creating health problems for the community, you will have more success in addressing these concerns if many people in the community are aware of the problems and are working together to find solutions. This is the essence of a community-based health project.

So now what?

You could immediately try to gather information on the mine, for example, on metals that are in the mining waste water released into a nearby stream. You could lobby your political leaders

TIPS – THINGS TO CONSIDER BEFORE YOU BEGIN

Be prepared for fear and/or resistance to your efforts.

Issues related to contamination and health can create fears within the community. People may be concerned that if contamination is discovered property values will decrease, or the mine will have to shut down, leading to loss of jobs. There may be some people in the community who will challenge any effort to look at health in relation to the mine, especially in communities where the mine is the primary industry fuelling the local economy.

How to address fear and/or resistance?

It is good to acknowledge that the fears may be valid. But emphasize with community members that your ultimate goal is simply to improve community health – not shut down the mine. If closing the mine was your goal, you wouldn't be initiating a community-based health project. It is also beneficial to get early support from “respected” community members such as Aboriginal band councils (if you live in or close to a First Nation), health professionals, teachers, and other community members.



In this step you will:

- Select members of the core group.
- Decide how your *core group* will operate.
- Create your vision of a healthy community.

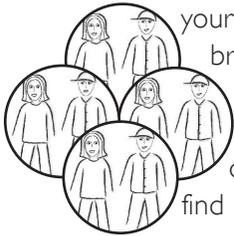
1.1 – Selecting Core Group Members

When you are first getting started, there may be a small group of citizens that has decided to seek answers. Or, maybe your community organization has taken this on as a priority issue. Whoever you are, you will be the initial core group that will lead a community-based project to improve your community's health.

There may be others in the community who can help you to think about community health and ways that it can be improved. Consider talking with local public health nurses or doctors, environmental consultants, chemical engineers, biologists, government officials, teachers or professors, other community groups with overlapping interests (such as local environmental or women's groups), industry representatives (such as workers or union members), service providers (such as child care workers, addiction support workers), and others.

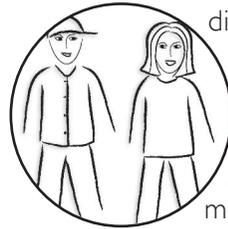
Should You Add Core Group Members?

PROS



Other people may add credibility to your effort: they may bring energy, enthusiasm and creative thinking; others may be able to find different funding sources for your effort.

CONS



Other people may have different goals than you do; if there is not trust between group members, poor group dynamics may arise.

After discussing the options, you may decide to add some members to your core group, or you may decide not to add any members at this time. You can always involve others later in the process. If you do bring in new core group members, you may want to make sure that they are in agreement with the core group's vision and ground rules (discussed later in this chapter).

Tool# 1: Discussing Core Group Membership, offers some questions to guide your discussion about core group membership (see the Toolbox).



TOOL #1: DISCUSSING CORE GROUP MEMBERSHIP

1.2 – How is Your Core Group Going to Operate?

Once your core group has been established, this group needs to decide on some basic but important items:

- 1) How decisions will be made;
- 2) How the group will interact;
- 3) How meetings will function.

Decision-Making

Decide how your core group will make decisions. There are different types of decision-making processes used by groups. Two common ones include: consensus decision-making and majority rule. It is a good idea to keep notes that record the key decisions that are made at each meeting.

Group interactions

Your core group members may want to develop some ground rules for how your group will interact. For example, rules may include:

- Provide everyone the opportunity to speak before a decision is made.
- Don't interrupt.
- Respect other people's ideas and perspectives.
- Agree that sensitive or personal information will be kept confidential within the group.

Write down your ground rules — you may need to refer to them in the future. It is also handy to have them available if new core members are added later in the process.

Core Group Meeting Process

Getting down to the nitty-gritty, you

will also need to think about how your core group meetings are going to function. Consider such details as:

- Determining when meetings will be held.
- Starting and ending meetings on time (note: this is especially helpful for those who have babysitters).
- Asking for commitment (for example, core group members commit to attending every meeting; or they are only allowed to miss a certain number).
- Deciding where meetings will be held, and assigning someone to book the space.
- Listing materials needed for the meeting (writing paper, pens, flip-charts, markers, easels, chalk, tape, etc.), and assigning someone to bring these items.
- Deciding who is responsible for setting the agenda (note: it's always good practice to review the agenda at the beginning of a meeting, and allow other members to add items of importance).
- Taking notes or minutes at each meeting to record who has agreed to carry out specific tasks, key decisions, and other important issues from the meeting (note: decide if minutes are going to be circulated prior to the next meeting, and assign someone to take and circulate the minutes).
- Deciding who is going to “run” or “oversee” the meeting (note: it is useful to have someone who makes sure that all items on an agenda are

addressed, that everyone has the opportunity to speak, and keeps the meeting on track. It does not always have to be the same person).

1.3 – Understanding Health

After you've figured out how your core group is going to function, you can start focusing on the reason why you formed your group in the first place – community health. Your core group members probably have different definitions of health, and different ideas about what factors have the greatest influence on individual and community health. Tool #2: What is Health? (see the Toolbox) provides information to help you think more broadly about health – both at the individual level, and at the community level. Use this tool to help stimulate a discussion about the many

related aspects of health, for example, social, cultural, psychological, physical, or spiritual aspects.



TOOL #2: WHAT IS HEALTH?

1.4 – Creating a common vision of community health

Now that you've thought about the range of factors that contribute to health, it is important to clearly describe what your ideal "healthy community" would look like. Tool #3: Defining Your Healthy Community (see the Toolbox) provides

some ideas on how to structure that discussion.



TOOL #3: DEFINING YOUR HEALTHY COMMUNITY

Once you have carried out the exercises in Tools #2 and #3, you will be ready to develop your core group's vision of a healthy community. It is highly recommended that core group members share a common vision from the outset. The outcome of this discussion can be a vision-statement of your ideal "healthy" community (see Tool #4: Creating a Vision Statement, in the Toolbox). A vision statement will help to provide focus, purpose, and direction for the group. As you proceed with your project, you can refer back to your statement

to remind yourselves of what it is you are working toward.



TOOL #4: CREATING A VISION STATEMENT

NOTES

2

THE LAY OF THE LAND



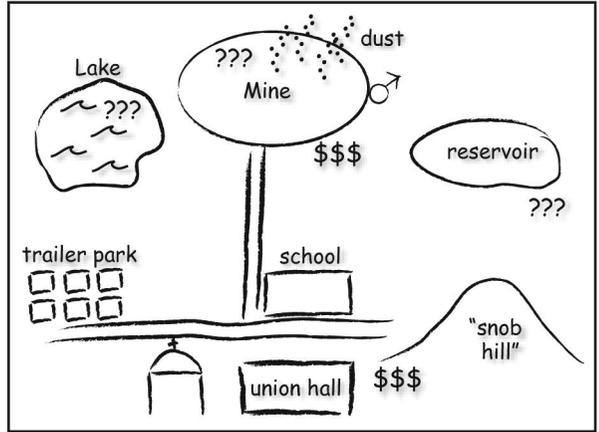
Identify factors affecting community health

Gather information from community members

Summarize information

STEP 2 – THE LAY OF THE LAND

You are concerned about potential health effects from the mine. Within your core group there are probably different ideas of how the mine might be affecting your community. People may talk about contamination from the mine site, positive and negative changes that have already occurred in the community and changes they think may come over time. It is important to explore the range of ways that the mine may be affecting community health.



Any effort to improve community health is going to take time, energy and other resources. So, before you launch yourselves into a mining and health-related project, it is wise to take a step back and look at the lay of the land, which is essentially a big picture of the factors in your community that influence community health.

By carrying out the exercises in this step, you will be able to get a better sense of health resources and barriers in the community, as well as the political, social and economic forces that may be affecting your community's health.

Before reaching out to the community for input, it is recommended that the core group members run through the exercises in this section. This will help

the core group to become familiar with the tools and exercises before taking them into the community. It may also help guide the core group in deciding what types of information to seek from community members.



In this step you will:

- Determine the “lay of the land” – the main factors influencing health in your community.
- Gather information from community members.
- Summarize the information that you gather.

Following this step may help to reveal factors influencing health that would not otherwise have been apparent to you.

2.1 – Determining the lay of the land

There are a number of approaches that can be taken to determine the “lay of the land.” Here are two tools that can help you gain a greater understanding of the factors that are influencing health in your community:

- Web influence diagrams.
- Community health mapping.

It is strongly recommended that you go through at least one of these approaches. If you have the time and energy, it would be best if you could try both tools. This will provide you with more information, and it will help your core group to determine which tool might work best when you start gathering information from the community.

Assessment Tools

Option 1 – The web influence diagram

How can we start to understand and describe the factors that affect health in a mining community? Health is like a web, where many factors influence each other in inter-related ways.

Web influence diagrams can help you to organize information about community health in a way that allows

you to see how different elements influence each other. For example, air quality affected by the mine may affect health in the community by increasing asthma rates or the number of asthma attacks per month, decreasing physical activity, or increasing stress. In turn, an increase in stress may contribute to an unhealthy home-life situation, or may affect an individual's physical health.

We all have our own mental map of our community. Creating a web diagram is a hands-on process that can engage a diversity of community members and build common understanding.

The web influence diagram can be used as a simple tool to better understand the local context. It can help to identify key areas of community concern, and it can help you to choose health priorities. Over time, the web influence diagram can be used as a communication tool to visually describe to others your group's view of community health.

Plan a core group meeting for using the web influence diagram tool (Tool #5 in the Toolbox).



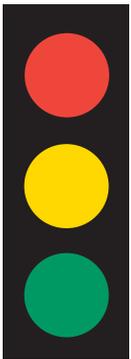
TOOL #5: WEB INFLUENCE DIAGRAM

Option 2 – Mapping community health

You may not realize it, but there are many resources within your community that are contributing in positive ways to health. There are also weaknesses in your community that pose barriers to achieving improved community health.

In addition, there are political, social and economic forces in your community that can contribute to or hinder community health (and your health project).

What are health barriers?



Barriers may be people, organizations, social trends (such as increased drug use), environmental issues (such as air pollution from the mine), lack of health-related services, and many others.

What are health resources?

Resources support or promote health. Resources may include people, organizations, physical features like

gardens, buildings (such as community centers), services (such as affordable daycare), and many others.

Community mapping is an exercise that allows a group of interested people to explore their community's health-related resources and barriers in a visual way. You will draw these things directly onto a map of your community. You will also draw some of the important political, social and economic forces that are affecting community health. As people actively participate in the mapping exercise, they will start to talk about what they know about the community, the changes they have noticed, and the main health concerns. People will also talk about the things they do not know enough about, including worries about what might happen in the future. These "information gaps" are as important as the things people do know, and may form the basis for your health project. Plan a core group meeting for using Tool #6: Mapping Community Health (see the Toolbox).



TOOL #6: MAPPING COMMUNITY HEALTH

Review core group "lay of the land" information.

After the core group has run through one or both of the "lay of the land" tools, you will have a lot of information. Review that information, and think about how well the tools worked, before you start to gather information from the community.

TIPS – REVIEWING LAY OF THE LAND INFORMATION

Which concerns seem to be the most pressing?

Your assessment may have identified issues or trends that generated concern among core group members. For example, several of you may have mentioned that there seems to be an increasing number of people with asthma or certain cancers living close to the mine. Or that shift work is causing stress in many families. You'll want to find out if the community agrees that these are the most pressing concerns.

What are the important gaps in information?

Your assessment may have identified gaps in knowledge. For example, nobody in the group knows what metals or other contaminants the mine is releasing into air and water. Or, if the rate of a certain illness is higher than it should be for a community similar to yours. When you begin to gather information from the community, you may want to involve people whom you think can provide information on your "gap" areas.

TIPS – HEALTH IMPACTS FROM MINING RELATED METALS AND CHEMICALS

By now you will likely have had some discussions in the core group about the mining-related metals and chemicals to which the community may be exposed. If so, you may want to do some research on the potential health impacts from mining-related metals and chemicals before you move on to the step of gathering information from the community.

See the resources provided at the end of this step under "Additional Resources" for some publications that will help you start to understand the potential health impacts from metals and chemicals that are typically associated with mining.

2.2 – Gathering Information From the Community

By using the **web influence** and **community health mapping tools** the core group has identified pressing concerns and important gaps in information.

It is now time to gather information from the community. This is the only way

to get a picture of the community as seen through the eyes of the residents. It is also a way to find out if the concerns of the core group are shared by others in the community, and whether the community has concerns that were not identified by the core group.

Community members have important knowledge about community resources and barriers; political, social and economic forces; and potential health impacts from mining and other sources. They can also share with the core group the community health issues that they would most like to see addressed. This can help the core group gauge if community members would be interested in a project related to mining and community health.

Bringing community members together

There are different ways to bring people together to gather information — each way has its pros and cons.

Open community meetings:

Advertise widely.

- **Pros:** allow people with diverse interests to hear other points of view; increase community awareness.
- **Cons:** no control over who shows up; could be very large and difficult to facilitate.

Small, invited community meetings:

Invite key people or members of

organizations whose feedback you think would be valuable.

- **Pros:** can keep to a manageable size (not more than 30); may provide a “safer” environment for sharing information.
- **Cons:** may miss important perspectives.

Focus groups:

Invite small groups of people with a common interest, characteristics, or specialized type of knowledge (for example, Elders, women, hunters, mine workers, health experts).

- **Pros:** smaller groups; more manageable; provide a “safe” environment to discuss issues.
- **Cons:** time-consuming if you need to hold a number of focus group sessions to include many key groups of people.

Focus groups are a useful way to gather specialized expertise on an issue that you have already identified as being of concern in the community. For example, maybe some community members mentioned that they know anglers who are concerned about the health of fish in waters downstream from the mine. It may be useful to bring together a focus group composed of people who fish, and ask them about their experiences and knowledge of the fish in streams and lakes around the mine site.

TIPS – HOLDING COMMUNITY MEETINGS

For all meetings, whether they be open community meetings, small invited community meetings or focus group meetings:

Make sure your meeting time does not conflict with a major event in the community.

If you are inviting a small group of specific people it is a good idea to send them personal invitations a couple of weeks before the meeting, and call them a day or two before the meeting to remind them of the date, time and location.

If your community meeting is small enough, it is ideal to have people seated facing each other, for example, around a table.

Start by welcoming your guests and providing them with an overview of your health project. You might want to prepare a one-page background on the project to hand out.

Set some ground rules for the meeting such as: minimize side conversations; only one person should speak at a time; treat every person's ideas with respect.

Ask the person who is "running" or "overseeing" the meeting (sometimes call the moderator) to pause after each person speaks, to allow others to comment on the speaker's ideas.

Ask the moderator to be aware of participants who are not speaking, and to encourage participation by directing questions to these people.

If no one is speaking very much, the moderator can pose a question and go around the table to get everyone's response.

Thank the group for their time and participation, and let them know how they can be kept informed on the progress of your health project.

For focus group meetings:

It is possible that people within a specialized group may not feel comfortable sharing information with each other. You can still gain the specialized knowledge from this group by interviewing the people individually, rather than holding a group meeting.

Plan a focus group meeting using Tool #7: How to Use Focus Groups (see the Toolbox).



TOOL #7: HOW TO USE FOCUS GROUPS

Information you need to share with the community

Any time you hold a meeting, you should provide community members with some important information. Before you communicate with the community, prepare some basic information about your community health project, including:

- A brief background on why you have come together as a core group – it is important to stress here that your primary motivation is to improve community health.
- There may be fears in the community that raising health concerns might cause the mine to shut down, or that homes near the mine will depreciate in value. It is good to acknowledge these fears upfront. You may want to explain that your intention is not to stop the mine from operating, but rather, to assess if there are mining-related health concerns in the community, and to see if there is something that the community can do about these concerns.
- A description of your approach to health (for example, the World Health definition, or your own creation), and your vision statement.
- Assurance that any information community members provide will not be attributed to them (in other words, they will remain anonymous).
- Assurance that community members will be able to get updates on the project from you, and that results from the project will be publicly available.

Gathering the information

When you have assembled your community members together in an “open” or “small group” community meeting you will lead them through the same exercises that your core group has already carried out, using the **web influence diagram** or **community health mapping tool**.

Before you start these exercises with the community group, you should first spend some time talking more

generally about health. Your core group had this discussion in Step 1, before you developed your community health vision statement. It will be useful to ensure that everyone involved in the meetings or focus groups understands that a healthy community encompasses much more than physical health. To facilitate this discussion you could hand out a copy of the health determinants diagram found in Tool #2: What is Health?

2.3 – Summarizing the information

Following your meetings with the community and your focus group meetings, your core group will have a very large amount of information. You will want to review this information, and organize it in a way that will help you to think about what to do next.

The Toolbox includes two tools to help you to summarize your information.

Tool #8: Information Summary Worksheet, provides examples of how to organize information on health concerns. Tool #9: Resource Summary Worksheet, provides a way to organize information on the resources that are available to you to help you to carry out your project.



**TOOL #8: INFORMATION
SUMMARY WORKSHEET**



**TOOL #9: RESOURCE SUMMARY
WORKSHEET**

ADDITIONAL RESOURCES



- “Meeting and Deciding”; “Facilitating”; and “Fundraising” in *Tools for Democracy*. CitizensWorks.
http://www.citizenworks.org/tools/town/tools-town-meeting_deciding.php
- Information on “How to run a good meeting”; “How to Develop a Fundraising Plan.” Western Organization of Resource Councils.
<http://www.worc.org/development/howto.html>

Health Impacts from Mining-Related Metals and Chemicals

- *Hardrock Mining: Risks to Community Health* by Aimee Boulanger and Alexandra Gorman. September 2004.
http://www.earthworksaction.org/pubs/MiningHealthReport_WVE.pdf

ADDITIONAL RESOURCES



- *Overburdened: Understanding the Impacts of Mineral Extraction on Women's Health in Mining Communities* by CCSG Associates for MiningWatch Canada. May 2004.
<http://www.miningwatch.ca/index.php?/285/Overburdened>
- "Harm from Toxic Chemicals" Chapter 16 in *A Community Guide to Environmental Health* by Jeff Conant and Pam Fadem. 2008.
http://www.hesperian.org/publications_download_EHB.php
- "Mining and Health" Chapter 21 in *A Community Guide to Environmental Health* by Jeff Conant and Pam Fadem. 2008.
http://www.hesperian.org/publications_download_EHB.php
- "Health and Environmental Effects of Trace Elements in Metal-Mining Wastes." Center for Science in Public Participation.
http://www.csp2.org/reports/Fact_Sheets--Trace_Elements_in_Mining_Waste.pdf
- *Vashon Island Heavy Metals*. Institute for Environmental Research and Education. (Including resources such as "Heavy Metal Handbook – A Guide for Healthcare Practitioners: ; "Arsenic, Cadmium and Lead Exposure.")
<http://www.iere.org/vashon-metals.html>

NOTES

3

PROJECT GOALS



Focus on key health concerns and/or information gaps

Brainstorm project goals

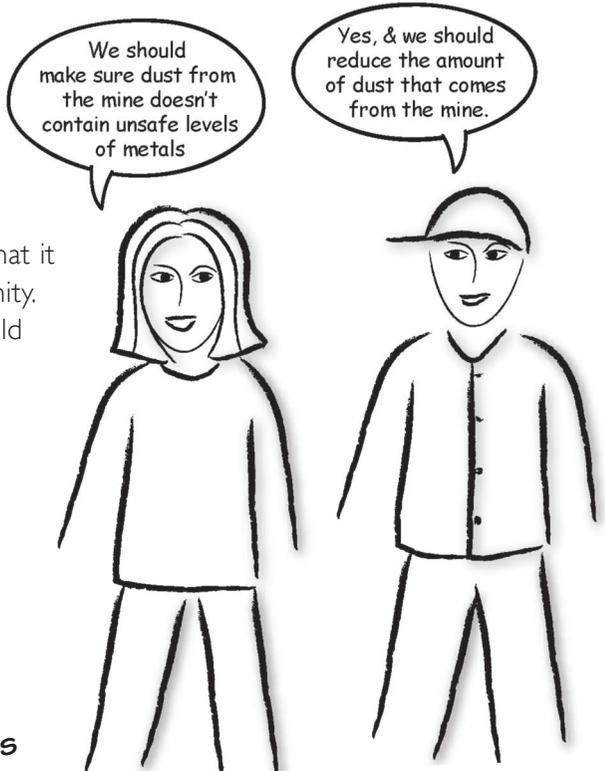
Choose project goals

STEP 3 – PROJECT GOALS

In Step 2, you surveyed the lay of the land and made a rapid assessment of your community's health. If you are reading this, it probably means you have determined that there is significant community interest in health, and also some resources available to do something about it.

But what exactly are you going to do?

In Step 1, your core group spent some time creating a vision of what it means to have a healthy community. Ultimately, whatever you do should move you toward that vision.



In this step you will:

- Focus on key health concerns and/or information gaps.
- Brainstorm project goals.
- Choose project goals.

3.1 – Focusing project ideas

In Step 2 you summarized the key health concerns you heard people talk about during your community mapping exercises with the core group and in your community meetings. You also summarized key information gaps, and you took a look at what resources you have to carry out a health project.

It's now time to focus in on some potential project ideas. You can't do it all!

It may help to ask yourselves, "What are the top three health concerns that

we heard, and, are they related to gaps in information?" You may need to refer to your Information Summary Worksheet (Tool #5) to answer this question.

Ultimately, whether you tackle one or more health concerns in this project will depend on the number of serious concerns identified by the community, and whether or not you have the resources (for example, energy, time, people to carry out the work out) to address more than one concern at this time.

Examine your chosen health concerns

Now that you have chosen a few health concerns/information gaps to focus on, take a closer look at them. You may find they are complex and cover one or more of the determinants of health that you looked at in Steps 1 and 2.

For example, maybe a large number of people in the community voiced concerns about dust from the mine blowing into the community. What did people actually tell you? Look again at the charts you created under Step 2.

Perhaps some people said:

- They don't know what is in the dust, and they are worried that metals in the dust may affect people's health if they breathe the dust.
- They think the dust may be causing diseases related to breathing problems, such as asthma.
- They have heard that certain kinds

of dust can cause lung cancer.

- The dust is blowing into the reservoir and the community garden, and may be affecting water and food.
- The worst thing about the dust is that it covers everything that they leave outside and it feels so oppressive that it is affecting their mental health.
- The dust gets into the houses even when the windows and doors are closed, so that the house needs to be continually cleaned.

As you can see, dust from the mine may cause a number of different health concerns. It is also clear that gaps in information about the dust are creating questions and concerns among community members. You will need to decide if there is one specific concern or a few of these concerns that you want to tackle in your project.

3.2 – Brainstorming project goals

Now that you have narrowed your focus to a few key health concerns, and you have examined the various aspects of these concerns more closely, you are ready to think about project goals.

Your project goals will respond to the key concerns that you have identified.

A *project goal* is simply a statement of what you want to accomplish through your project.

You may have several goals that relate to the same problem.

For example, some goals related to dust from the mine could be:

Goal: Ensure dust in homes does not contain unsafe levels of metals.

Goal: Find out if the dust could be linked to high rates of a certain disease in the community.

Goal: Reduce dust from the mine site.

Goal: Prevent dust from entering homes.

At this point, you are simply brainstorming some potential goals for your health project. The nuts and bolts of how to actually achieve your goals will be worked out in Step 4. Read Tool #10: Brainstorming Project Goals (see the Toolbox) before you begin your brainstorming exercise.



TOOL #10: BRAINSTORMING PROJECT GOALS

3.3 – Choosing project goals

When you are through with your brainstorming exercise, you will need to choose one or more primary goals to work toward.

How can you narrow down your options? Some questions to think about:

- *Is there a project goal that addresses a number of health concerns?* For example, if the mining company could be persuaded to stop allowing dust to leave the mine site, many problems would be solved at the same time.
- *What project goals are most exciting or interesting to you?* The core group is going to make this project

happen, so it is very important that you choose a project that you really want to work on.

See the Tip Box below for other ideas.

If there are several good project goals, you can move on to Step 4, which involves determining strategies to reach these goals. As you start to strategize, it should become evident that some goals are simply not achievable in the short-term, given the time and resources of your group. Those goals should not be lost, though. Keep a record of all your ideas. There may be an opportunity to work toward those goals in the future.

TIPS – CHOOSING PROJECT GOALS

Before you choose your project goals, take a moment to review your vision statement. Any project that you undertake should bring you closer to your ideal “healthy” community.

There are different ways to think about how your project will bring you toward your vision of a healthy community:

- A project can create or enhance things that are beneficial to community health;

(continued)

- A project can remove or reduce things that are detrimental to community health.

The more your project goals match community needs and interests, the more likely you are to get community support for your activities.

Choose project goals that can be met given the amount of time and resources available to your group.

3.4 – Develop Indicators

For some or all of your project goals, you may want to include an *indicator* that will help you and others know whether or not you have met, or made progress, toward your goal. An indicator is something that can be measured or observed, and can be used to track progress on goals, strategies and activities. Indicators can be focused on short or long term measures.

Use Tool # 11: Indicators (see the Toolbox) to learn more about using and developing indicators for your project.



TOOL #11: INDICATORS

NOTES

4 STRATEGIES



Learn about strategies

Develop strategies to meet your project goal

Brainstorm activities in your strategies

STEP 4 – STRATEGIES

Congratulations!

By choosing your project goals you've formed a clear idea of what it is you want to achieve with your community health project.

But how are you going to reach your goals?

Roll up your sleeves, because this is where the nuts and bolts of your project planning takes place. It is now

time to select specific strategies that will help you meet your goals. You'll also list the specific activities that are involved in each strategy.



In this step you will:

- Learn about different possible strategies.
- Develop strategies to meet your project goals.
- Brainstorm activities involved in your strategies.

4.1 – Learning about strategies

When we talk about strategies we are simply referring to the different approaches that you can take to meet your project goals. One or more strategies may be required to meet a single goal.

There are several types of strategies that you may want to consider as you move forward with your project.

These include:

- Strategies to address data gaps.
- Action-oriented strategies.
- Strategies that address project resource gaps.

Strategies to address data gaps

During the lay of the land exercises people probably felt confident about linking some health issues to the mine and were able to point to existing information or their own experiences to support their concerns. But there were probably other health concerns

that people suspect are linked to the mine, but they are missing information to back up their ideas. For example, some people might have expressed strong beliefs that the dust from the mine is linked to asthma in the town. But no one had seen any information on the dust (such as what it contains or how much is released) or on asthma rates.

Filling in data gaps may involve digging up information that already exists and summarizing it in a way that is useful for the community. Or, you may have to fill data gaps by going out and gathering information that has never before been collected, or that has been collected, but is not being shared with the community. This can provide some valuable information, but some of these approaches may be very time-consuming and expensive.

Data gathering may include:

- Additional focus or small group meetings.
- Questionnaires and surveys.
- Research in libraries and on the internet.
- Information gathering from sources that have the data you need (for example, the company, regulators.)
- Community monitoring studies such as *biomonitoring* or environmental sampling.
- Clinical or medical testing (for example, testing lung function.)



There are a variety of ways to gather information to help you understand what might be affecting health in your community. Through focus or small group meetings you can gather information directly from people in your community. You can also do that by conducting a survey where you ask a *random sample* of people some very specific questions. See Tool #12: Health Assessment Survey (see the Toolbox) for more information.



TOOL #12: HEALTH ASSESSMENT SURVEY

If you are looking for information on potential health impacts from industrial contamination you can start by doing research on environmental and health impacts on the world wide web or in your local library. For example, if you know that arsenic and lead are being emitted into the air from an ore processing plant or through dust from the tailings, you may want to look for scientific studies on the health effects of these contaminants.

If you don't know what is being released from the mine, you may want to gather information on the types and quantities of contaminants being released from the mining operation. To do this, you may have to contact government agencies that regulate the mine.

See Tool #13: Data Sources (see the Toolbox) for more information on how to find health and environmental data.



TOOL #13: DATA SOURCES

Finally, if existing data do not provide you with the answers to your questions, you may want to develop your own community monitoring studies to collect human health or environmental data. Monitoring approaches may include biological or body burden testing (*biomonitoring*), air monitoring, house dust monitoring, water testing, food/product monitoring and other environmental sampling.

Monitoring may also include clinical testing to detect impairment of lung function, motor skills, reflexes and other physiological functions that might be related to exposure to metals or other contaminants. (There is some information on clinical testing in Tool #13: Data Sources.)

Testing hair, feces, urine, nails and blood can tell you whether or not people in the community have been exposed to metals and other contaminants. Different tests will provide you with different information – some tests provide you with information on recent exposures, while others tell you what you have accumulated in your system over a longer period of time. These tests do not tell you where these contaminants originated. It is important to talk with health professionals about the different types of tests.

Spot tests for lead provide a low-cost method to quickly do a rough check for lead in dust. If the swab turns pink or red, then lead is present. But, to determine the exact concentration of lead, credible sampling and laboratory analysis needs to occur.

The monitoring methods used can vary from inexpensive, simple tests that tell you if a contaminant is present (but not the actual concentration), to more expensive methods such as laboratory analyses of samples, which can tell you the exact concentration of the contaminant.

Tool #14: Environmental Sampling (see the Toolbox) provides some background information to help you determine whether or not it makes sense to undertake an environmental sampling program. For other resources related to community monitoring, see the “Additional Resources” box at the end of this step.



TOOL #14: ENVIRONMENTAL SAMPLING

TIPS – BRINGING IN SPECIALISTS

Your core group can undertake several of the strategies used to fill-in data gaps, for example, conducting more focus group sessions. Other strategies, however, may require more technical expertise, for example, testing hair, feces, urine, nails and blood for metals and other contaminants.

If you want to use a strategy that requires outside expertise, you can first check to see if there is someone in the community that has this expertise – perhaps from a medical facility or an academic institution, or perhaps there is a retired technical expert in your community.

You may need to go outside of your community to find a person with the required expertise. It will be important that this is someone who respects your community-centred approach and will work with the core group to develop and carry out the strategy. You may be referred to someone who will work with you through an organization that specializes in community-centred health approaches. You can find some of these organizations in the “Additional Resources” boxes in this Toolkit.

To find a suitable specialist near you, may have to do some research on the Internet. You can also consider partnering with a non-governmental organization, or with an academic institution for your community health project. Again, it will be important that the partner organization understands and respects the community-centred approach that you are taking.

Action-oriented strategies

You may feel that you already have enough information to take action on some of the concerns that were expressed by the core group and community. For example, you may want to bring specific health concerns directly to the attention of decision makers, the media, the mine management, or a union.

Or you may feel that you don't have the resources to conduct environmental

sampling of soils, but you want to do something so that people who garden can be sure that the vegetables are grown in uncontaminated soil.

Action-oriented strategies may include:

- **Campaigns:** For example, a campaign might involve people writing letters to local government officials, asking them to require the mine to find a way to reduce dust from its operations or from its waste piles. An education campaign might involve public meetings, and door-to-door pamphlet distribution to inform people of the potential health impacts from the mine and other sources.
- **Community projects:** For example, a community project could move the community garden to a part of town that is less likely to be contaminated by pollutants from the mine.
- **Issue groups:** For example, a women's group can provide a safe forum for women to talk about gender-related health concerns, and help each other find solutions.

TIPS – SELECTING STRATEGIES

There are a couple of important questions to ask yourselves as you begin to discuss potential strategies:

How will the strategy help you to meet your project goal? Do you have the time and resources (financial and people) needed to carry out the strategy?

- You may need to get some information before you can decide whether or not this is a viable strategy. For example, before you decide to undertake an environmental sampling study, you should find out the cost to rent or purchase sampling equipment and to get samples analyzed. If you don't have the resources, that doesn't mean that you should not proceed with a particular strategy. It may simply mean that you need to have a fundraising strategy, or a strategy to bring on volunteers.

Is there something else we need to do before we attempt this strategy?

- For example, if the strategy is to do a health survey, you may need to do some community trust-building before people will feel comfortable enough to answer your questions. Or there may be data or information gaps that need to be filled before you know whether or not the strategy is viable.
- If the strategy is to conduct environmental sampling, you may need to decide how you want to use the data. If you want it to be highly credible, you will need to find out how to prepare a chain-of-custody slip to prove that there was no tampering with any of your samples.

Strategies that address resource gaps

One strategy that should not be overlooked is finding the resources (people, finances, meeting space) to help you carry out your project. The last thing you want to do is to get part-way through your project and realize that you do not have the resources available to complete what you started.

Strategies that address resource gaps include:

- Planning fundraising.
- Recruiting volunteers.
- Seeking out equipment and materials (can some be borrowed, rented?)
- Building capacity (for example, train people to take samples, conduct surveys.)

4.2 – Developing your strategies

Outline Possible Strategies

Start by creating a list of possible strategies to achieve the project goal or goals that you identified in Step 3. Brainstorm openly at first—get those creative juices flowing!

Once you have brainstormed some strategies, look at them in more detail to determine whether or not you have the ability to carry out the strategies. Here are some examples of how to think through a strategy:

EXAMPLE 1

GOAL

Ensure that metals in dust from the mine are at levels that are safe for all family members to breathe and ingest.

STRATEGY

Conduct a study to measure the concentration of metals in dust in homes. Compare the measured concentrations to standards for metals in dust that is breathed in or ingested that are protective of health.

Questions

How will this strategy meet our project goal?

- If we do the sampling and compare the results to existing standards, and find that the levels in homes are lower than the standards, then we have more

confidence that the metal levels in the dust are safe. But if the concentrations are high enough to pose a threat to health, we need to come up with additional strategies to reduce levels in homes or reduce exposure to dust. Otherwise, people will not be any healthier (which is what we're ultimately working toward). They will just know that they are at risk, causing mental health concerns.

Do we have the resources to carry out this strategy?

- Maybe, depends on the cost of sampling.

What else do we need to do before we decide on this strategy?

- Find out the cost of sampling.
- Find out if people living downwind from the mine are willing to participate.
- Come up with one or more strategies to address the possibility that we may find that the metal levels are high (for example, campaign to highlight problems and demand action from the mining company and government).

Note: Remember that dust can be dangerous to health for other reasons than the metal levels. See 3.1 in Step 3 above.

EXAMPLE 2

GOAL

Raise community awareness of declining fish numbers and quality and the relationship to health.

STRATEGY

Research all information about local fish stocks (for example, scientific reports and traditional knowledge) related to declining fish numbers and quality. Release findings to the community.

Questions

How will this strategy meet our project goal?

- We will have provided the community with more concrete information on this issue. And we will have gained a greater understanding of an issue that may be affecting community health. We may identify information gaps, or possible relationships between the mine and the declining fish population. If so, we can develop follow-up strategies on how to fill those information gaps or investigate those possible relationships with the mine.

Do we have the resources to carry out this strategy?

- Yes. We have people to do research and gather information, and tape recorders to record stories, if need be. We have relationships with government employees who can help us find any relevant studies (if they exist).

What else do we need to do before we decide on this strategy?

- Find out if the First Nation is willing to work with us on this project. Their members have information and knowledge that no other community members can provide.
-

EXAMPLE 3

GOAL

Find out if the issue of domestic problems in families where a family member work shifts at the mine is a widespread concern.

STRATEGY I

Hold some focus group meetings with families that have a family member who works shifts at the mine. Ask them what, if any problems they experience in the family as a result of shift work. Ask them if they think these problems are more common in their families than in families that do not have shift work members.

Questions

How will this strategy meet our project goal?

- We will learn a lot more about the types of problems families face who have members doing shift work at the mine and we will learn if they think that the problems they face are greater, and more common than in similar families that do not do shift work at the mine.

Do we have the resources to carry out this strategy?

- Yes.

What else do we need to do before we decide on this strategy?

- If we find there is a widespread problem, we will need to have strategies for how to address the issue. We should make sure we have some good ideas before we go down this path.

STRATEGY 2

Conduct a survey among families that have a family member who works shifts at the mine, as well as among an equal number of similar families (same neighborhoods, economic position) who do not have a family member who works shift at the mine.

Questions

How will this strategy meet our project goal?

- These surveys may provide some insight into whether families with members who do shift work really have a greater number of domestic problems than similar families who do not have someone doing shift work. It may also tell us something about whether the types of domestic problems shift-work families experience are really different than the problems other families have.

Do we have the resources to carry out this strategy?

- We may need to find someone who knows how set up a survey and analyze the results.

What else do we need to do before we decide on this strategy?

- See if the union will either partner with us or endorse our survey. This could greatly increase the willingness of mine workers' families to participate, and increase the number of responses that we get.
 - Brainstorm options regarding what to do if we find that there is a widespread problem.
-

Select Your Strategies

Once you have outlined some possible strategies, decide which ones you think you can carry out first, given the time, energy and resources of your group.

Some of the strategies will seem immediately achievable, while others will not because they are too expensive, too time-consuming, or need expertise that is not available in the community. Keep a record of all of your ideas. Although you don't have the resources now, you may be able to use some of these strategies at a later date, if time and resources become available.

If you don't think you can carry out any of the strategies that you've outlined due to lack of time or resources, you may need to choose different strategies, or you may have to focus your energies on a different goal.

TIPS - THINK ABOUT COMMUNICATION

You may want to include activities that involve communicating the results of your project to your community.

Now is a good time to start thinking about how you are going to communicate with the community, both during the project and after you've gotten some results.

Any time you interact with the community, you need to be ready to provide some basic information. One activity could be to prepare background information about your project (see Step 6 for information on preparing an information sheet for your community).

At this point in the process, it may be too early to decide exactly what format your communications will take. In some cases, it will depend on what happens with your project. For example, if you were to find that the concentrations of metals in dust in homes are well below levels known to threaten to human health, you might decide on a very simple communication strategy to convey the good news. But if you were to find some metals at extremely high levels, you may want to do a more detailed report on your findings, and develop a media strategy to release your report. For more information about communicating your results, see Step 7.3 Communicating Results.

4.3 – Brainstorming activities

After you've selected the strategy or strategies that you want to use, start to think through what it is going to take to carry out your strategy. Start by listing specific activities involved in your strategy. Where possible, determine who will carry out the activities, and estimate the time required to accomplish each activity. All of this information will be used in your Action Plan (Step 5).

Here's an example of activities associated with a project goal and strategy:

GOAL: Ensure that toxic metals in dust in homes are at levels that are safe for all family members.

STRATEGY: Conduct a study to measure concentrations of metals in dust in homes. See if the concentrations are safe for all residents to breathe/ingest.

Possible Activities

- Find out how to perform dust sampling, and cost of sampling.
- If we don't have enough funds, raise money to pay for sampling.
- Find homeowners who are willing to participate in a sampling program (preferably homes that are downwind and get a lot of dust from the mine.)
- Find out if there are health standards for metals in dust (and if standards are different for various groups – for example, children, women, elderly.)
- Sample dust in homes.

ADDITIONAL RESOURCES



- “Meeting and Deciding”; “Facilitating”; and “Fundraising” in *Tools for Democracy*. CitizenWorks. <http://www.citizenworks.org/tools/town/tools-town.php>
- “How to develop a winning strategy.” Western Organization of Resource Councils. <http://www.worc.org/development/howto.html>
- “Spot Test Kits for Lead” in *Tools for Detecting Hazards*. Community Environmental Health Resource Center. <http://www.cehrc.org/tools/lead/stk/index.cfm>
- *Heavy Metal Handbook - A Guide for Healthcare Practitioners*. Institute for Environmental Research and Education. <http://www.iere.org/vashon-metals.html>
- *Community Monitoring Handbook. Coming Clean*. http://www.chemicalbodyburden.org/hb_index.htm
- *A Community Monitoring Decision Tool*. Biomonitoring Resource Center. Commonweal. <http://www.commonweal.org/programs/brc/toolkit.html>
- *A Community Guide to Environmental Health* by Jeff Conant and Pam Fadem. 2008. http://www.hesperian.org/publications_download_EHB.php
- *Mine Monitoring Manual: A Resource for Community Members* By Sue Moodie. <http://www.eprf.ca/eprf/mlf/documents/minemanual.pdf>
- For an example of a report prepared for a core group by an outside expert see: *Labrador West Community Monitoring* by CCSG Associates. September 2004. http://www.miningwatch.ca/updir/CCSG_report_en.pdf

5 ACTION PLAN



Develop an action plan

Review and finalize the action plan

STEP 5 – ACTION PLAN

Your action plan will record your project goals, strategies and the activities that you plan to undertake. By laying out these steps on paper, your project will begin to take shape before your eyes.



In this step you will:

- q Develop an action plan.
- q Review and finalize the action plan.

5.1 – Developing your action plan

The most logical way to develop your plan is to write down your activities in the order that you plan to carry them out (note: there may be some activities that you can do simultaneously). For each activity, include information on:

- Time required to carry out an activity.
- Who is going to do the work.
- Resources needed for each activity.

TIPS – CREATING AN ACTION PLAN

Once you have developed an action plan, ask:

Are there additional activities that need to be carried out that have been overlooked?

- **Make sure to include these activities in the appropriate place in your plan.**

Do you have the resources necessary for all of the activities?

- **If not, you'll probably need to add fundraising or volunteer recruitment to your list of strategies and activities.**

You may want to include indicators for your various tasks, so that you will have a way to easily identify whether or not you have achieved your goals and expectations.

NOTE: Some of these activities, such as Activity 4, will require a fundraising strategy to raise the funds to carry them out. See the Sample Action Plan on the next page.

5.2 – Reviewing and finalizing your plan

After you've created your action plan, review your goals, strategies and actions to see if they are consistent. You want to make sure that your final project design will help you meet your goals



SAMPLE ACTION PLAN

GOAL 1: Ensure that toxic metals in dust in homes are at levels that are safe for all family members.

STRATEGY 1: Conduct a study to measure concentrations of metals in dust from the mine in homes. See if the concentrations are safe to breathe and ingest for all family members.

Activity 1: Visit households close to the mine (aprox. 25 homes); ask them to participate in the study (allow us to take dust samples.)

Indicator: % of houses willing to participate, level of interest in participating

Who will do it: Three core group members

Resources needed: Clipboards to record information; willing households; dates when we can sample

Time required: 3 days

Activity 2: Train volunteers to take samples

Indicator: Number of volunteers trained to take samples

Who will do it: Local environmental consultant has volunteered to train two core group members on how to take samples.

Resources needed: Sampling equipment. Need to find out what we need, and costs

Time required: 1 day

SAMPLE ACTION PLAN (*continued*)

Activity 3: Collect samples from up homes (assume some will say no.)

Indicator: Number of homes successfully sampled

Who will do it: Two core group volunteers.

Resources needed: Sampling equipment.

Time required: 2 – 4 days

Activity 4: Send samples to the lab for analysis.

Indicator: Donations received for sampling

Who will do it: Two core group volunteers.

Resources needed: It costs \$50 to analyze 1 sample. If we have 20 samples, we need \$1,000 for analysis, plus \$ to ship samples to lab. Aprox. \$1,200. We have \$200.

Time required: It could take up to 3 weeks to get results.

Activity 5: Research what levels of metals in dust are known to be safe for children, adults, and elderly (local, provincial, federal or other regulations)

Indicator: Hours of volunteer effort

Who will do it: Suzanne. She has studied environmental law and policy.

Resources needed: None. Our volunteer has access to library and internet.

Time required: Two weeks. She can do this while the sampling is taking place.

Activity 6: Compare measured results with health standards.

Indicator: Sample results of metal levels in dust

Who will do it: Suzanne.

Resources needed: None. Suzanne has volunteered her time and computer.

Time required: Two weeks.

Activity 7: Communicate the results (work out details when we get results.)

Indicator: Number of pamphlets distributed

Indicator: Number of response calls from community members

Resources needed: May need some funding for publication costs; media; etc.

If STRATEGY 1 shows that metal levels are not safe:

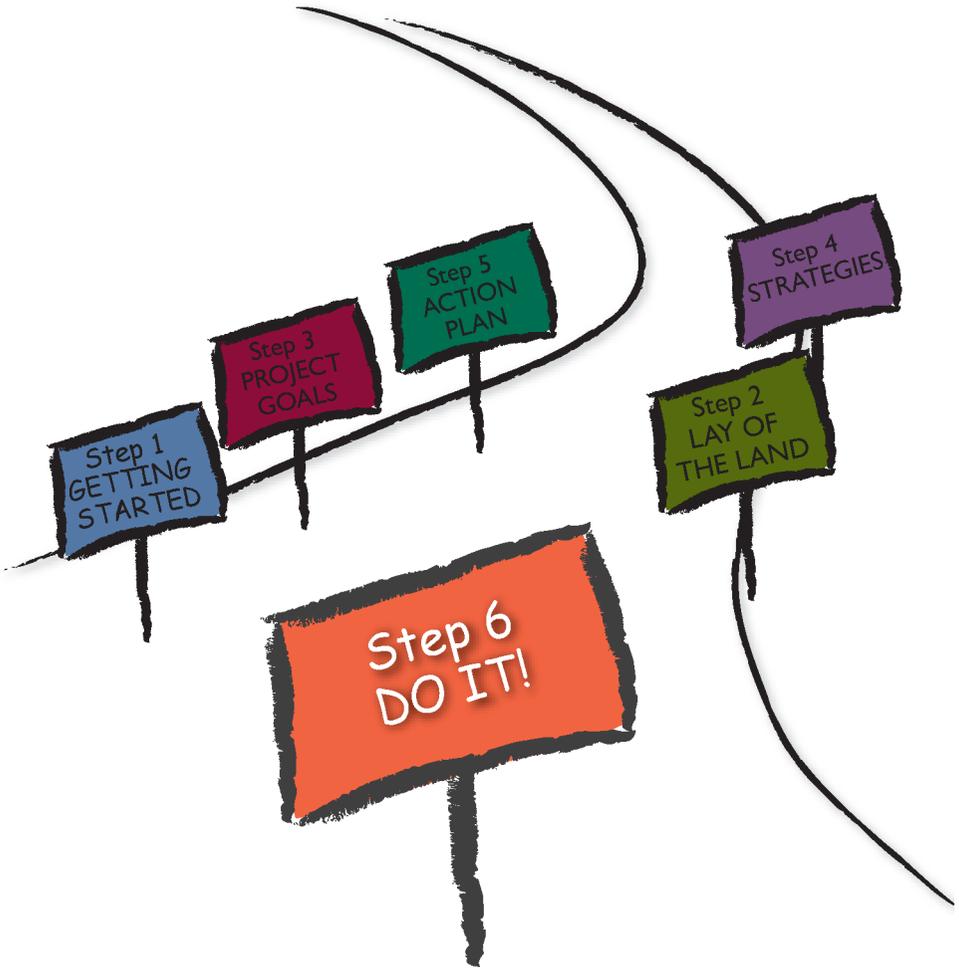
STRATEGY 2: Research ways to keep dust out of houses or otherwise reduce human exposure to dust.

STRATEGY 3: Launch media campaign to call for elected officials to make sure metal levels in dust are reduced, or volumes of dust are reduced.

Note: Some of these activities, such as activity number 4, will require a fundraising strategy to raise funds to carry them out.

6

DO IT!



Carry out your project

STEP 6 – DO IT!

Finally, you are ready to go forth and carry out your project. Go ahead and work through the activities in your action plan.



TIPS - CARRYING OUR YOUR ACTION PLAN

Don't get upset if there are unexpected events and setbacks.

- Few things ever go exactly according to your plan. For example, there may have been a flu bug going around when you held a community meeting, and nobody showed up. That's okay. Just determine another time to hold the meeting. And, revise the time-table that you set out in your action plan.

Prepare a Project Information Sheet

- Whenever you, the core group, interact with "the public," for example with members of your community, it is important to provide some basic information about the core group and your project. The first time you interacted with the public was in Step 2 (Section 2.2) when you started to gather information from the community through meetings. In community meetings you can provide the basic information about your project verbally, but when you start to move into the community to carry out your project it is helpful to have a one-page sheet of paper (a flyer) that you can hand out. The flyer should include key information about your project. For examples of the type of information to include in a project flyer, see Tool # 15: Sample Project Information Sheet.



TOOL #15: SAMPLE PROJECT INFORMATION SHEET

7

ANALYZE AND COMMUNICATE RESULTS



- Analyze project results
- Summarize project results
- Communicate results

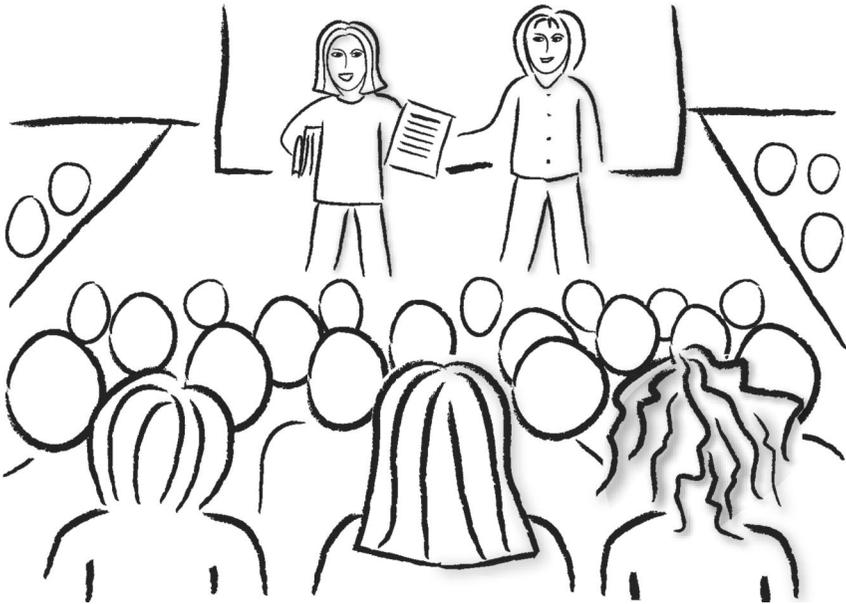
STEP 7 – ANALYZE AND COMMUNICATE PROJECT RESULTS

When you've completed your activities, you will need to take some time to review the outcomes of your project. Don't underestimate the importance of this step. What you do with the information that you have gathered, and how you communicate your findings will influence the success of your project.



In this step you will:

- q Analyze your project results.
- q Summarize your project results.
- q Communicate your results.



7.1 - Analyzing your results

If your project involved information gathering, you will have to do some data analysis and interpretation. This is an important task. If you gathered biological or environmental samples that were analyzed by a laboratory, you will want the person, or organization, that helped you with the data gathering to help you interpret the findings from the laboratory. You may also seek a second opinion on the interpretation of the laboratory data. If you had assistance in preparing a survey or questionnaire, you will want the person, or organization, that assisted you to help you analyze and interpret the findings from your survey.

After the data analysis and interpretation is finished, determine the main “findings” from your work, and summarize what you learned.

7.2 – Summarizing project results

You can summarize the information and project results in a number of different ways:

1. A detailed report

In addition to summarizing your main findings, a report could document your project methods, information on any data gathered, and a more in-depth discussion of your results. Writing a report, however, can take a lot of time, and requires some resources for printing, distribution and/or posting on a web site. Reasons to write a report include:

- By documenting your project, you will have produced a resource that may be used by other communities (or even your own community at some future date) that are thinking about undertaking a similar project.
- This level of detail may be necessary if you need to submit a report to funders on how you used their donations.
- By releasing a report, you may be able to get some media or government attention for your project.

2. Pamphlets or fact sheets

These are more condensed summaries of your project and the main results or findings. They are less expensive to produce than reports. If you want, you can tailor a pamphlet or fact sheet for a specific audience (residents, mine workers, local government, local service providers) by including only the information that is most relevant to that audience.

TIPS - ANALYZING AND COMMUNICATING RESULTS

It is very important to be as honest and open about your findings as possible. If you conducted a survey and the results were inconclusive, be sure to state that. Do not claim anything that cannot be backed up by the data – the last thing you want to do is damage the credibility of the core group and others associated with the project.

If you did not do any information gathering beyond the work you did in Steps 1 and 2, but undertook an action-oriented project, you may not need to produce a report or even a pamphlet or fact sheet that summarizes the results of your project. But your core group will still want to summarize what you achieved with your project, since you'll probably want to share this information with the media and with people who donated resources or participated in the project.

7.3 – Communicating results

Once you have summarized your results, you need to figure out the best way to communicate those results to the community (or parts of the community). You have already made some commitments to participants to provide them with certain information about your findings.

There are several different ways to communicate results to your community. You may want to use more than one approach.

- **Public meeting** (with or without media.)
- **Media:** press release, *op-ed*, letters to the editor; interviews, press conferences.
- **Mailout:** a letter or flyer summarizing your results (or the entire report) to participants and others (decision-makers; company; health department.)
- **Website:** post information about your project on a community website.

ADDITIONAL RESOURCES



- Information on “Getting Noticed.” CitizensWorks. Tools for Democracy.
http://www.citizenworks.org/tools/town/tools-town-get_noticed.php
- “How to Hold a Press Conference”; and “How to Receive Positive Media Attention.” Western Organization of Resource Councils.
<http://www.worc.org/development/howto.html>
- For an example of a report based on a community-centred health assessment see *Effects of Mining on Women’s Health in Labrador West* by Labrador West Status of Women Council and Femmes Francophones de L’Ouest du Labrador. 2004.
http://www.miningwatch.ca/index.php!/223/Lab_West_report

8

EVALUATE PROJECT



Evaluate your project
Celebrate your successes

STEP 8 – EVALUATE PROJECT

Sometimes life gets busy, and before you know it you are on to the next project. Before you move on to whatever comes next, it's a good idea to evaluate and celebrate your community health project.



In this step you will:

- Evaluate your project.
- Celebrate your successes.

8.1 – Evaluating your project

An evaluation of your project does not have to be time-consuming. But it can provide some very useful information to your core group – especially if you are considering tackling another project. As a core group, ask yourselves:

Project specific questions

- Did you reach your project goal(s)? In Step 3 or 4 you may have created *indicators* that would easily tell you whether or not you've met your project goals. If you did not develop indicators, you'll be able to talk generally about whether or not your goal was attained.
- If you did not reach a project goal, did you make progress toward it?
- What else needs to be done to reach your goal?

Community health questions

- Did your health assessment process produce new information about factors affecting community health?
- Did your health project produce new information related to community health?
- Did you increase awareness about a particular community health issue?
- Did you open up a more active community discussion about health?
- Did you increase the core group's capacity for research and data gathering?
- Did you build or expand relationships with media, government officials and regulators, unions, health professionals, industry representatives?
- Do you feel more empowered to improve community health?
- Were you able to use the information gained in the health assessment phase to seek collaborative partnerships with specific experts or institutions for parts of the health project phase?
- Did you implement a change in the community that has resulted in improved health?
- Did your project help to build relationships in the community?

- Do people in the community have a better understanding of the web of factors that influence community health?
- Are people more willing and able to take action to assure community health?

Lessons learned

- What worked well?
- What didn't work well?
- What would you do differently?
- Do you think you involved the right people?

8.2 – Celebrating your successes

It's now time to pat yourselves on the back. You've completed your health assessment and project, and that, in and of itself, is a huge accomplishment. As part of any evaluation, you should really take some time to celebrate all of the positive things you have accomplished. Throw a party!

Talk about your successes. You:

- Completed a project together.
- Made some new friends.
- Added to the general knowledge and understanding of health in your community.
- Learned some valuable lessons.



TOOLBOX



TOOL #	TOOL NAME
Tool #1	Discussing Core Group Membership
Tool #2	What is Health?
Tool #3	Defining Your Healthy Community
Tool #4	Creating a Vision Statement
Tool #5	Web Influence Diagram
Tool #6	Mapping Community Health
Tool #7	Focus Groups
Tool #8	Information Summary Worksheet
Tool #9	Resource Summary Worksheet
Tool #10	Brainstorming Project Goals
Tool #11	Indicators
Tool #12	Health Assessment Survey
Tool #13	Data Sources
Tool #14	Environmental Sampling and Data
Tool #15	Sample Project Information Sheet



TOOL #1: DISCUSSING CORE GROUP MEMBERSHIP

Here are some questions to guide your discussion on core group membership.

Q: What kinds of people could be useful in your core group?

For example, people living close to the mine; mine workers; men and women; different age groups; different ethnic groups; hunters/anglers; environmentalists; mining industry representatives; other industries; government agencies; health workers; gardeners; biologists; birders? Others?

Q: When should these people be involved?

Decide if all of these people need to be part of the core planning group, or if some can be involved during later phases, or in a role other than core group member.

Q: Is it important for you to be inclusive?

Discuss **pros** and **cons** of being inclusive. For example, **pro**: government and industry representatives or other groups could bring some resources to the table (meeting space, access to information, funding) and increase the credibility of your project; **con**: if some members of the community distrust each other the process may break down or not be very effective.

Q: What is the level of trust between the people (or organizations they represent) that are you are considering as core group members?

Does trust already exist between the individuals/groups or can it be created? If distrust exists, how will it affect the effectiveness of the planning group? Will different perspectives be beneficial or harmful to the project?

Q: Should there be some criteria for participation in the core group?

For example, members must agree with the vision statement and ground rules for group interactions.

Q: Who chooses core group members?

You may want to agree that all current members must be okay with the addition of a new member. Or maybe you'll decide that if a majority of members agree, then that person can be added to the group.

Things to consider:

- You can always add core group members later in the process. Be sure to share your groups' vision and ground-rules with any new core group members. (You may have developed criteria that require the new person to accept and support your core group's vision statement and ground rules.)
- Rather than add members to your core group, you can bring in advisors that help generate ideas or provide specific expertise, but do not participate in making decisions.

NOTES



TOOL #2: WHAT IS HEALTH?

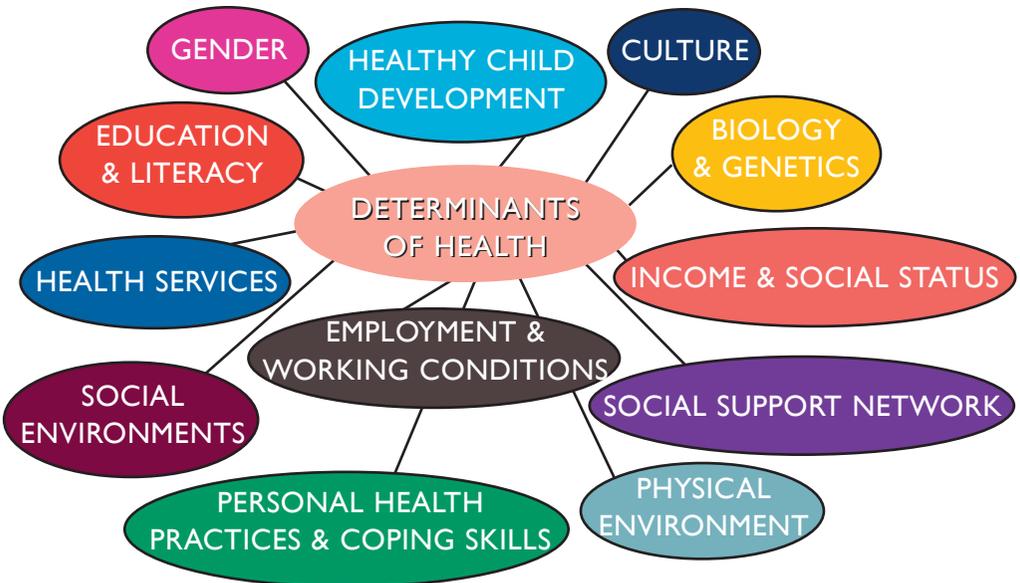
This tool is designed to encourage people to consider a broad definition of health.

What does it mean to be a healthy individual and a healthy community? On an individual level, for some people, being healthy means that they are not sick. Our physical condition certainly is an aspect of health — but it is only one factor to consider. The World Health Organization defines health as:

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

While this definition applies to individuals, think about how these ideas can also relate to families and entire communities.

Health Canada and others have identified a number of “determinants of health.”



This diagram shows many factors that influence an individual’s health. These same factors also work together to determine the overall health of a community.

ADDITIONAL RESOURCES



- Health Canada. 1997. *Determinants of Health Working Group Synthesis Report*.
http://www.hc-sc.gc.ca/hcs-sss/pubs/renewal-renouv/1997-nfoh-fnss-v2/legacy_heritage4_e.html#l_l
- Federal, Provincial and Territorial Advisory Committee on Populations Health. 1999. *Statistical Report on the Health of Canadians – Part A, Determinants of Health*.
<http://www.statcan.ca/english/freepub/82-570-XIE/parta.htm>

NOTES



TOOL #3: DEFINING YOUR HEALTHY COMMUNITY

Think about what you want for your community. If you could snap your fingers and make your community a “healthy community,” what would it look like?

One way to answer this question is to discuss in more detail the determinants of health. Put some of the health determinants up on a flip chart or chalkboard. Then, take some time to brainstorm what each of these health determinants means to you. For example:

Our ideal healthy community has:

1. A HEALTHY SOCIAL ENVIRONMENT

This means:

- Relationships between family members are stable and positive.
- Living conditions promote psychological and emotional well-being.
- People have enough to eat, and a safe place to live.
- People have satisfying, well-paying jobs.
- Teenagers have opportunities for positive engagement with each other, and with other community members.

2. A HEALTHY PHYSICAL ENVIRONMENT

This means:

- Air is safe for humans and animals to breathe.
- There is enough water for everyone.
- Water is safe to drink.
- Water is safe for recreation.
- Water is safe for wildlife and fish.
- Soils support the growth of vegetation that is safe to harvest and eat.
- Vegetation is contaminant free (especially vegetation used for food, traditional ceremonies and medicine, for example sweet grass.)
- Fish and wildlife populations are healthy and contaminant-free.

3. COMMUNITY SERVICES THAT SUPPORT HEALTH

This includes:

- Support systems for people with drug or alcohol problems.
- Schools with a range of after-school programs for homework support, sports, music and arts.
- A women's shelter.
- A job training center.

4. HEALTH SERVICES

This includes:

- A clinic for treating health problems.
- Enough doctors, nurses, mental health specialists.
- Affordable health care.
- Good access to a hospital.
- Traditional healers.
- Alternative health care providers (naturopaths, acupuncturists, etc.)

You can also create your own categories, such as "healthy homes"

5. Having a HEALTHY HOME ENVIRONMENT

This means:

- Air is safe to breathe inside the house and in the yard.
- Smoke-free homes.
- Tap water is safe for drinking and bathing.
- Vegetables from the garden are safe to eat.
- Home life is safe and secure for women and children.
- Every person has adequate shelter and food.
- Children are engaged in creative play and physical activity.
- There are no unpleasant industrial odors or noise.



TOOL #4: CREATING A VISION STATEMENT

You have come together because you believe that change is possible, and you have ideas about what your healthy community could look like.

A vision statement describes the future community that you want to create.

It is the ideal that you hope will one day be realized. You should not expect to achieve all aspects of your vision statement any time soon, if ever. There will always be more that you can do to improve the health of your community. But remember: every small step that you take toward your vision can result in important changes in community health.

You may want to formulate your vision statement starting with something like:

Our ideal healthy community is one where . . .

Then list the things that you believe are the most important factors contributing to a healthy community. You probably want to focus on between 3 and 10 key factors for your vision statement.

Write down your vision statement so that you can refer back to it throughout your health assessment and project process. You may even want to write it out on flip chart sheets and hang it up at all your meetings so that it will guide your discussions.

Don't worry too much about exact wording. The important thing is to capture the main components of your core group's vision. Specific wording can be re-worked later if desired.

You may want to spend some time discussing how your vision might differ from the vision held by others in the community (e.g., elected officials, the business community). Understanding these differences will help you in Step 2, when you begin to think about barriers to achieving community health.



TOOL #5: WEB INFLUENCE DIAGRAM

How can we start to understand and describe the factors that affect health in a mining community? Health is like a web, where many factors influence each other in inter-related ways.

Web influence diagrams provide a way to visually organize community health information. They describe how different elements of health influence others. For example, air quality that is affected by the mine may affect many aspects of health in the community by causing asthma, stress, a reduction in physical activity, and other medical conditions.

Creating a visual picture is a hands-on process that includes community members' ideas about overall health impacts.

Conducting a web influence exercise

You can carry out a web influence exercise in a small group (up to 30 people) that represents the community's diversity, or in a focus group of people who all have something in common (for example, elders, people who hunt, community health nurses, child care workers, teachers).

The discussion is essentially a brainstorming event where all involved share their views on health changes that they see in the community or that they think may come in time. Factors that either improve or harm health can also be included in the diagram.

Sometimes the influence is bi-directional – for example, depression may be caused by many factors, such as loss of connection to the land, traditional foods or culture. Depression, in turn, may increase someone's sense of loss of connection to the land and the person's ability to participate in gathering traditional foods or in cultural events. Air quality, from dust blowing from transportation routes or mine waste, may cause increased asthma. The burden of this illness within a family has emotional and economic stress for both the family and community, which may influence other health outcomes and community relationships.

Follow these steps to draw a web influence diagram (see the Sample web influence diagram below):

1. Begin by asking what has changed, for better or worse, as a result of the mine (for example, impacts to land, water, culture, community, family relations). Write the answers on a flip hart or blackboard.
2. Draw circles around each individual impact
3. Draw arrows to show how the impacts influence each other (for example, an arrow from mine discharge to streams that points to contaminated fish).
4. Label the line with a negative (-) to indicate that the influence is harmful, or a positive (+) to indicate a positive influence on health. Using coloured ribbons, or markers, may be visually helpful, for example use red for harmful influences, amber for caution, and green for positive influences.
5. Investigate which relationships are bi-directional and draw arrows pointing in both directions between the two factors.

A range of community perspectives can be integrated into the diagram—even conflicting viewpoints. In fact, a comparison of different viewpoints can be useful in identifying where there are agreed-upon influences and where perspectives differ within the community. This will help highlight areas of disagreement that may affect future health planning efforts. The web map also helps identify knowledge gaps, and complex or indirect influences.

Once a general web picture is drawn, each influence line can be ranked for four characteristics:

- **Severity** of impact (**S**)
- **Likelihood** of occurrence (**L**)
- **Importance** of occurrence (**I**) (note: record the number of people who identify the factors as being important - it will influence the ranking)
- **Duration** of occurrence (**D**)

The ranking (**score**) can have a number attached so that the importance of each influence can be determined.

For example, severity of impact (S) can range on a scale from 1 for minimal impact to 5 for life threatening (S1 to S5).

SAMPLE WEB INFLUENCE DIAGRAM



Using the information in a web influence diagram

- The diagram can be used to provide a purely visual tool for priority setting; or
- The scores can be entered into a simple spreadsheet program (such as Excel) to create a basic matrix.

You may want to use colours for ranking when drawing the web (for example, use an orange marker for severe, purple for minimal), but change to numbers for the chart. This will provide a semi-quantitative tool for priority setting. Using Excel, you can sort the data from high to low scores within each category (e.g., severity of impact, likelihood of occurrence, etc.). You will then have to use your

best judgment to determine which issues are of highest priority. Something that ranks very high in importance to the community, moderate in the severity of impact, and high in the likelihood of occurrence might be a higher priority than something that ranks low in likelihood of occurrence, even if the severity of impact is high. Use the ranking system from the influence diagram to create a summary table of the weights.

Summary chart for setting priorities

Symptom	Severity of Impact	Likelihood of Occurrence	Importance of Occurrence to Community	Duration of Occurrence	Priority for Action
If tailings dam breaks acid mine drainage will enter river; fish will die	5	2	4	5	MEDIUM
Asthma rates are high from air pollution from smelter emissions	3	5	4	3	HIGH



TOOL #6: MAPPING COMMUNITY HEALTH

This tool helps you work with community members in a small community group or in a focus group “map out,” in a visual way, the health resources and health barriers in your community. It also allows community members to talk about a wide range of specific health concerns they may have. Finally, it will allow you to identify gaps in information that may be of concern to the community.

When you complete this exercise, you will have a very large amount of information covering many different aspects of health: physical, social, economic, cultural, psychological, and spiritual.

What will you need?

- Flip chart paper.
- Masking tape.
- Coloured markers (enough for several participants to use at once.)
- Time (this exercise will take 2-3 hours, depending on the size of your group; **ideal groups range in size from 5 or 6 to about 30.**)

TIP: If you plan to offer refreshments (coffee, cookies) to your guests you might need to add some time to your overall time for this exercise so that people can get their refreshments.

Meeting preparation

- Review this tool so you know how it will unfold and prepare an agenda for the meeting.
- To prepare for the mapping exercise, tape 4 or 5 flip chart sheets up on a wall side-by-side and then another row above or below so that you end up with one very large surface area to draw your map. The size of the drawing surface you create will depend somewhat on the size of your community.

TIP: If you are holding your meeting in a classroom you could use the chalkboard. But make sure to take a photograph of the final drawing so you have a record.

- Across the top of your large surface area put the name of your community.
- In the middle of your large surface area, draw a feature that is in the center of your community that is well known. For example – it could be a church or a community center. Draw a simple image of a church (a square with a tall triangle on top for the steeple) or a community center (a rectangle) and write the name of the church or the community center near it. This will help people start to get an orientation for the mapping that will follow.
- Make sure you draw large enough so that people seated in the room will be able to see your drawing. You can add some other basic features, such as a main downtown street or intersection, but don't get carried away! The map will be drawn by the community members in this exercise.
- Along another wall put up about 13 flip charts side-by-side with space between them. Label the flip charts with the following categories: PHYSICAL HEALTH; SOCIAL HEALTH; ECONOMIC HEALTH; PSYCHOLOGICAL HEALTH; CULTURAL HEALTH; SPIRITUAL HEALTH; ECONOMIC FORCES; POLITICAL FORCES; SOCIAL FORCES. On the last flip chart write: INFORMATION GAPS across the top. Leave some empty in case people come up with different categories of health than those you've put up.

Core Group Tasks

Ideally, three core group members will be actively involved in this exercise and the rest will be present to welcome community members as they come in and assist in any way they can.

- One core group member will draw on the large flip-chart surface area that you created for your community map.
- One core group member will “capture” discussion on the flip charts on the other wall, organizing what people are saying under the various types of health and adding categories of health on the empty flip charts if they arise from the discussion.

One core group member will take notes on the discussion and try to capture whatever is missing from the map and the flip charts.

Welcome!

Welcome community members to the meeting and explain the purpose of the meeting.

- Introduce the core group members. Explain that you have come together out of concern for community health and that you are eager to learn from them what their health concerns, if any, may be.
- Introduce your vision statement and let them know you hope your project will help move the community closer to that ideal. Provide copies or post a copy of your vision statement on the wall.
- Hand out the health diagram from Tool #2: What is Health, and explain that you are adopting the World Health organization's definition of health, which means that you will look at the physical, social, economic, cultural, psychological, spiritual aspects of health.

Mapping community health resources and barriers

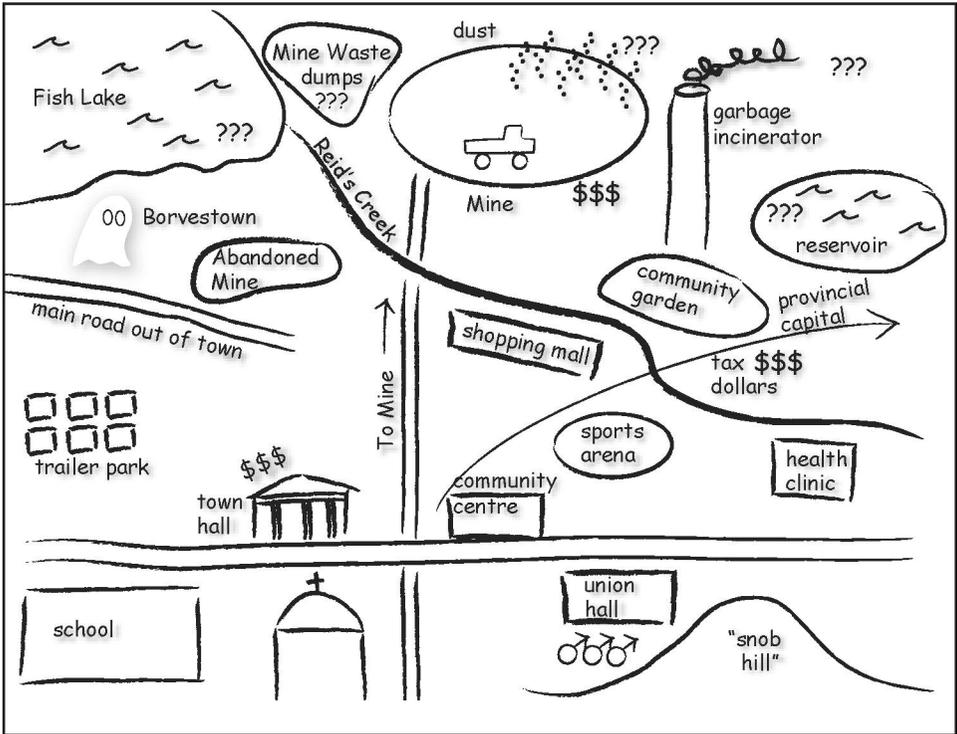
To start this exercise, explain to the community group that one way to think about community health is by looking at the health "resources" that exist, or are missing, and at "barriers" to health that exist in the community right now.

- What are *resources*? Resources are features of the community that contribute to positive health, and can include people, organizations, physical features (such as gardens), buildings (such as community centers), and services (such as affordable daycare).
- What are *barriers*? Barriers that stand in the way of improved community health may include people, organizations, social trends (such as increased drug use), environmental issues (such as air pollution), and lack of health-related services.

Remembering the broad definition of health you have just discussed, it is time to draw health resources and barriers on your map. A core group member will stand at the map and lead the mapping exercise by asking questions. This should not be a very formal exercise. Encourage the group to call out answers. You may need to ask them to slow down so you and the other core group members can capture everything that is said. The core group member leading the mapping exercise draws the community resources and barriers that the community participants call out. As people become more comfortable with the exercise, you can also have them come up and draw on the map themselves. Have plenty of markers available.

Keep your drawing simple. You can use words or symbols to add information such as \$\$ for money or ?? for an unknown. You can use a plus (+) sign to

show things that are positive for health and a minus (-) sign for things that detract from health. You can also use arrows (→) to show connections between things.



Use different colours to symbolize different kinds of things (for example, green for things related to money, blue for healthy things, red for concerns).

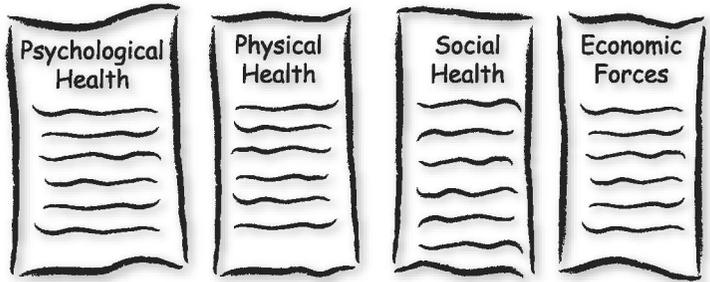
Here are some questions that can help guide this exercise:

- What educational resources do we have in the community? Do we have enough of these, are there any missing? How do they contribute to our health?
- What physical activity resources do you have in the community (indoors and outdoors)? Do we have enough of these? What is missing?
- What community services resources do we have in the community? (child care, women's center, women's shelter, library, addiction treatment centers, others?) Do we have enough of these? What is missing? How do they contribute to our health?

- What physical health resources do we have in the community (e.g., doctors, nurses, clinics, hospitals, naturopaths, traditional healers)? Do we have enough of these? What is missing? How do they contribute to our health?
- What are the main economic resources we have in the community (sources of employment)? Are they sufficient? Are they available for men and women equally? How do they contribute to our health? How do they detract from our health? Are there diverse economic opportunities? Is the local economy shifting in any way?
- What emotional or mental health resources do we have in the community (psychologists, psychiatrists, therapists, programs, support groups)? Do we have enough of these? What is missing? How do they contribute to our health?
- What spiritual resources do we have in the community? Churches, synagogues, mosques, spiritual health centers? Do we have enough of these, are there any missing? How do they contribute to our health?
- What transportation resources do you have in the community? Are they sufficient? Are they safe for old people and children?
- What human resources do you have in the community, volunteers, service organizations, such as boy scouts or knights of Columbus, a union? Do they contribute to community health?
- Are some areas in the community healthier than others? Where are they and why are they healthier? Where are the less healthy areas, why are they less healthy?
- Are their homes that are healthier than others, where are the healthiest homes? Why are they healthier? Where are the least healthy homes? Why are they less healthy?
- Where does the community's food come from? Is the food healthy and affordable? If not, why not?
- Where does the community's water come from? Is it healthy? If not, why not?
- Is the air healthy? If not what are the sources of air contamination?
- What are the biggest sources of pollution in the community? Where are they? What do they pollute?

As people jump up to draw resources on the map, discussions may erupt that provide more insight into how the community members think about health and the concerns they have. If individual conversations start, ask people to talk to the whole group.

The core group member at the flip charts and the note-taker should try to capture the essence of these discussions. The core group member



at the flip charts should try to organize the information the community group is providing into the categories of health on the flip charts or start a new category. If people talk about something they do not know enough about, add that under the flip chart called “information gaps.” If you have to add flip charts, get another core group member to help you. Remember to add the heading of the category of health across the top.

Adding social, economic and political forces or trends

In our mapping exercise so far we have considered health “resources” and “barriers.” It is now helpful to reflect a bit more on some of the forces at work in your community, as these may have an impact on health and also on the success of your health project.

You can add this information to the map. Some questions you may want to ask are:

Economic Forces

- Is the local economy changing in any way?
- Are parts of the economy getting stronger, or weaker?
- Who is most positively affected by the economic forces at work in the community?
- Who is most negatively affected by the economic forces at work in the community?
- Are there economic resources that leave the community, such as employers, young people, and natural resources?
- Where do taxes go? (You can show this by an arrow and a dollar sign going off the map toward a city where tax dollars go.) How about the products

- from under the ground that the mine produces? Where are they processed?
- Where do royalties and taxes from the mine go?

Political Forces

- Do local elected leaders contribute in a positive way to maintaining and expanding the health resources of the community?
- Do local elected leaders address health concerns of the community?
- You can ask the same questions for provincial or state political leaders.
- Do you think you will receive support from the political leaders in your community for your health project?

Social Forces

- Are people in the community becoming more united or more divided?
- What are the social forces that bring people together in the community?
- What are the social forces that drive people apart?

After 40-60 minutes when the map is quite full and most resources, barriers and forces seem to have been discussed, take a brief health break. Core group members can use this time to catch up and try to make sure all the information is captured on the flip charts within the categories of health.

Talking about mining and health

After the break, call the group back together. Look at the wall of flip charts with the categories of health. The core group member who has recorded information there reviews what was written down under each category with the community group. After reading out what was captured under each heading, the core group member can ask:

- Is this information correct, did I adequately capture what you said?
- Is any information missing? Are there community health issues related to this category of health that no one has mentioned yet? Are there "unknowns" related to this category of health that have not been mentioned?
- Are there health concerns under this category that are specifically related to the mine?
- Are there physical health problems in this community that people think may be related to the mine? Discuss this.
- Are there mental health issues in the community that people think may be related to the mine? Discuss this.
- Are there social health issues in the community that people think may be related to the mine? Discuss this.

As people focus on the individual categories of health and the forces and the

information that was written down under each of these, they may start to talk about other issues than those that came up in the mapping exercise. These should be added to the charts. This is the time to make sure that your community group focuses on any issues that are specifically linked to the mine. You may find that there is disagreement on certain issues. Don't try to resolve these disagreements — just capture both sides.

What do we not know?

Finally, it is time to look at the chart that captured those things that people were unsure about – the “information gaps.” Review what is already on the chart and ask the community group to consider what is missing. This is a good time to focus questions on the mine.

- What is in the air emissions from the mine? Do we know enough about this?
- What is in dust from the mine? Do we know enough about this?
- What is in water emissions from the mine? Do we know enough about this?
- Where is mine waste stored? Is it a concern for health?
- Does shift work affect our physical health?
- Is it possible that certain kinds of pollution from the mine can cause certain illnesses that are common in the community?
- Do we know what chemicals are used in the mining process and where do they go?

Write down anything else that is said or questions that are asked.

Closing

Thank your community group for coming out. Let them know:

- What you will be doing next with the information they provided.
- How they can keep in touch with you on the project.
- How you will provide project results to them.



TOOL #7: HOW TO USE FOCUS GROUPS

What is a Focus Group?

Focus groups are small groups of people (7-12) with a common interest, characteristic or specialized knowledge. For example, they may be women, elders, hunters, health experts, people who all live in the same neighborhood, children, or mine workers.

Members of focus groups have a specialized type of knowledge because of their similar life experiences, specific skills, geographic location, etc.

Why bring together a Focus Group?

In Step 2 your core group spent some time assessing the health issues of your community by using the Web Influence Diagram or the Community Mapping Tool. You identified positive health aspects of your community and possible health concerns. You identified changes the community has experienced related to mining. You may have found that there were certain key issues that came up that you want to know more about. For example:

- You may want to know more about the health of fish in a river near the mine's waste dumps.
- You may want to know how community women feel about the problems related to a family member's shift work in the mine.
- You may want to know if it is really the case that there are more cases of people with a particular disease in the community now than 20 years ago when the mine started operating.

In order to find out more about these very specific issues, you may want to bring together a focus group of "experts" in these areas. For example, you could bring together community members who fish to ask them about the health of the fish they are catching in rivers around the mine site. You could bring together women from mining families to talk about the positive and negative affects on the family of having a family member working in the mine. You could also bring together health professionals in the community to speak generally of their observations.

You do not expect your focus group to give you the “right answers” to your questions, or to represent all the knowledge about the issue of the whole community, but to simply to tell you how they see the situation from their unique perspective.

If you only plan to hold one focus group meeting, it makes sense to bring together the community’s health experts to find out if they think there are any unusual, or increasing health concerns in the community. This is also a good way to start to introduce health experts to your community health assessment project. Perhaps one or two may even be willing to join the core group or act as advisors to the core group.

Advantages of using Focus Groups

There are certain advantages to using focus groups:

- When you bring together people with something in common they often feel comfortable with each other and may be more likely to interact and react to comments made by other participants.
- It is a way to get a lot of data in a shorter amount of time than through individual interviews.
- By listening to the interactions of people who have similar interests you may get spontaneous information you would not have thought of asking for in a structured interview.

Disadvantages of using Focus Groups

- It may be somewhat harder to control the discussion and make sure your questions are answered as focus group members may start to interact on issues that are not of direct interest to you.
- The discussion may be fast paced and wide ranging making it hard to capture all that is said.
- You may find that some experts start to use specialized language amongst themselves making it hard to capture what they are saying.
- The discussion may be biased by one or a few dominant or opinionated participants and others may be uncomfortable voicing opposing opinions.

If there is reason to be concerned that members of a group of people may not get along very well, or may not speak freely in front of each other, you could also conduct a focus group by identifying a group of experts but interviewing them individually instead of in a group.

How to Conduct a Focus Group

You should have a set of questions prepared that you want to have answered by your focus group participants. An ideal number of questions is between 5 and 10. Think of questions that will invite discussion and opinions rather than questions that can be answered by “yes” or “no.” Questions that start with “why” are usually not very helpful as they lead focus group participants to feel they have to answer a question with the “right” answer, when you really want them to feel free to offer their thoughts, opinions and ideas.

It is useful to arrange your questions in a logical way so that each one follows from the one before a bit like a discussion.

Recording the Discussion

Just as you needed people to record the responses from the core group members and community members when you conducted the Web Influence Diagram and the Community Health Mapping exercises, you will need to try to capture what you hear from your focus group members as well.

It is useful to focus on:

- descriptive phrases or words you hear participants use to describe their experience or opinion;
- specific themes to which people keep coming back;
- specific examples that people gave.

Reporting on your meeting

You should keep a record of your focus group meetings recording how many people came and what you learned. It is useful to include quotes from what people actually said but remember that you will not record any names. Parts of this record may become part of a final report on your community health project if you decide to write a final report.

ADDITIONAL RESOURCES



- Mary Macczak and Meg Sewell. *Using Focus Groups for Evaluation*. <http://ag.arizona.edu/fcs/cyfernet/cyfar/focus.html>
- Richard A. Krueger and Mary Anne Casey, 2000. *Focus Groups: A Practical Guide for Applied Research Resources*.



TOOL #8: INFORMATION SUMMARY WORKSHEET

There are many different ways to summarize the information that you will get from your meetings with community members. The goal now is to focus in on the main health impacts that you heard about in your community meetings. Here are two sample worksheets. You may prefer to create your own worksheets.

Sample Summary Sheet 1:

What are the major concerns identified as affecting health in our community?
Be aware that some issues will fit under numerous categories because many of

Physical Health	Emotional Health/ Psychological Health	Socio-economic Health	Information Gaps
<ul style="list-style-type: none"> • Many people living close to the mine complain of asthma. • Domestic violence in families where one or more members works at the mine. • Decrease in number and quality of fish downstream from mine (are contaminants in fish affecting numbers and health of fish?) • Children can't play sports on bad air quality days. • People are not out on the land carrying out traditional harvest, lower activity and decrease in food quality. • Seem to be high number of certain diseases or cancers. • The health clinic is not open enough hours. • mine truck traffic is tearing up roads, creating hazards. 	<ul style="list-style-type: none"> • Domestic violence in families where one or more members works at the mine. • Depression as a result of living with destroyed environment and waste piles. • Fear in town with increased fighting and substance use by incoming mine workers. • Loss of work time and school attendance due to poor health. • The dust from the mine that covers everything in town is depressing. • There are not enough mental health professionals. 	<ul style="list-style-type: none"> • Poverty seems more prevalent among families that don't have someone working at the mine. • Decrease in number and quality of fish (important source of food for many in the community.) • Shifted economy from land-based harvest and tourism to construction jobs. • Loss of work time and school attendance due to poor health. • Men have more power because most high paying jobs go to the men. • There are not enough jobs in the community for women. 	<ul style="list-style-type: none"> • No information on metals in dust from the mine. • Don't know if water samples are being taken downstream of the mine. wastewater outlet • Don't have hard data on whether or not asthma rates are increasing in the town, or how our rates compare to other communities.

these issues affect health in different ways. Some of these will be directly related to the mine and others may not be related. You may want to circle the mining-related ones in red.

Sample Summary Sheet 2:

1. What factors contribute in a positive way to the health of our community?

- After-school athletic and arts program for teens gives them something to do.
- Clinic (although it could use more doctors.)
- Community garden provides fresh vegetables.
- Hiking and biking trails are easily accessible.
- There are high-paying jobs.

2. What factors are barriers to community health?

- Unemployment rate is increasing.
- People don't buy locally.
- High rate of domestic violence – may be related to mine shift work.
- No women's shelter.
- Dust from the tailings blows all over town – but has greatest effect on those living close to the mine; don't know if dust poses a threat to human health – not knowing creates stress for those living close to the mine.
- Fish populations are decreasing; and the quality of fish flesh seems to be getting worse.

3. Where are the information gaps?

- We don't know if there are toxic metals in the dust from the tailings.
- We know company collects data on air and water pollution from the mine, but we've never seen the information.
- We don't know if contaminants from the mine are causing a decrease in fish populations.



TOOL #9: RESOURCE SUMMARY WORKSHEET

What community resources are available to help with a project?

In order to define the scope of your next steps, you need to have a realistic idea of how much time, energy, and funding you have to continue.

Here is one way to organize a list of available resources.

Resources we have	Resources we need	Ideas for obtaining resources
<ul style="list-style-type: none"> • People power! • Meeting space (donated by local church.) • Participation of several local organizations. • Volunteer to translate materials into Cree. • Volunteers to help with data analysis (Local environmental consultants; college students.) 	<ul style="list-style-type: none"> • Meeting facilitators. • Funding for information gathering, report production and printing. • Funding for clinical tests, for example, testing for metals in residents (in hair, urine, feces, or blood) or testing lung function. • OR funding for testing for metals in environment (dust in homes; soils; water; air) 	<ul style="list-style-type: none"> • Donations from participating organizations (money and use of resources, e.g., photocopiers.) • Ask local graphic artists to donate time to design report layout. • Bake sales or raffles • Apply for grants (local, provincial, federal.) • Donations from community residents.



TOOL #10: BRAINSTORMING PROJECT GOALS

In Step 3, you narrowed down your list of key health concerns and information gaps. You also examined a few health concerns more closely and discussed various aspects of these concerns.

In this exercise, for each of your key health concerns and information gaps, brainstorm what you would want to achieve if your group decides to focus on these concerns. There may be a number of different project goals for each health concern.

On a chalkboard or flip-chart, write down ideas generated by your group.

Key health concerns/ information gaps	Possible project goals (<i>What would you want a project to achieve?</i>)
<p>DUST FROM THE MINE: A lot of people voiced concern about dust from the mine:</p> <ul style="list-style-type: none"> • It is depressing. • It creates a lot of work for us always cleaning it off our things. • What metals are in the dust? • How does it affect us if we breathe it in? • There are many people in this community with breathing problems. • Is it getting into our drinking water? • Is it affecting the food from our community garden? • How can we reduce the amount of dust coming from the mine? • How can we keep it out of our houses? • Is it related to certain diseases? 	<ul style="list-style-type: none"> • Find out if levels of metals in dust are high enough pose a threat to health if breathed in. • Find out if there really are abnormally high levels of people with lung and breathing problems in the community. • Find out if the open reservoirs have acceptable metal levels in them. • Find out if the soil in the community garden is safe. • Move the community garden away from the area that is affected by dust from the mine. • Talk to elected officials and mine managers and insist that they reduce the amount of dust coming from the mine.
<p>FAMILY STRESS</p> <ul style="list-style-type: none"> • The issue of domestic problems among mine workers and their families was raised by a few people. • Comments on how shift work makes it difficult to have a healthy family life. 	<ul style="list-style-type: none"> • Find out if this is a widespread issue among families of mine workers in the community. • Create work situations that are more likely to promote stability in home, and lead to healthier family relationships. • Create a support group for families that are under stress.

Key health concerns/ information gaps	Possible project goals <i>(What would you want a project to achieve?)</i>
<p>UNHEALTHY FISH</p> <ul style="list-style-type: none"> • First Nations members and some other community members talked about decreased numbers of fish, and that fish flesh is of poor quality since the mine started. Fish is an important part of the diet of many residents. 	<ul style="list-style-type: none"> • Find a way to get this issue examined in a thorough way (e.g., independent or government study). • Find out if discharges of water/wastes from the mine have affected the health of the fish. • Create informational materials to raise community awareness of this issue.

NOTES



TOOL #11: INDICATORS

There will likely be ups and downs in your path towards achieving your desired community health outcomes. And your project may just be a stepping-stone on the way to your ultimate goal. It can be useful to have some way of knowing if you are making progress towards or away from your goal, and/or whether you've actually achieved your goal.

One way to track your progress is by developing an indicator. An indicator is something that can be measured or observed, and that helps you to understand where you are, how far you've come, and whether or not you've met your desired outcome.

Using indicators

Indicators can be used to track progress on goals, strategies and activities. To develop indicators, review the organizational charts for your project goals, strategies and activities. Look for specific information that can be measured in the implementation of the goals, strategies or activities to see if progress is made or not. These measures may be either outcome indicators or process indicators. They may also fall into short or long term categories. In some cases, the indicator may be a negative attribute (for example, number of drinking and driving accidents), but a reduction in these accidents indicates progress towards a healthier community.

Outcome indicators focus on the specific goals, strategies and activities laid out in your action plan.

For example:

- If your goal is to improve air quality in your community, an outcome indicator could be “particulate matter measured in local air on a weekly basis.”
- If your goal is to improve the air quality in homes that are affected by mine dust, an outcome indicator could be “quarterly dust metal levels in homes near the mine” or “frequency of asthma attacks.”
- If one of your strategies to reduce stress in mining families is to create a support group, an outcome indicator could be “the number of individuals regularly attending the mental health support group.”

Outcomes can also be measured qualitatively. For example, an outcome indicator of the success of a support group could be “level of satisfaction with support group”. If the level of satisfaction is low, you know that the group has not been completely successful, and more work needs to be done.

Process indicators focus on the progress of the project itself, rather than the result of the project. Process indicators may be quantitative, such as “number of people attending weekly planning meeting,” or “number of volunteers helping to conduct the survey.” Or, they can be qualitative, such as the enthusiasm and engagement of participants in the planning process, or a description of the diversity of individuals involved.

Other examples of indicators to evaluate the progress of your project include:

- Tracking who is involved (e.g., by ethnic diversity, age, gender of participants.)
- Number of meetings held.
- Number of media calls.
- Volunteer hours involved in planning.
- Number of surveys conducted.
- Why new members decided to join.

Many of these indicators do not require resources, and take minimal time to track. Defining indicators increases awareness that it is worthwhile to write down the number of people who attended a meeting, or to check in at the end of a meeting to see if people feel like things are on track. This provides information that can help guide the process as it moves forward.

Choosing a good quantitative indicator

An indicator should be **SMART**:

- **S**pecific and clear.
- **M**easurable and cost-effective.
- **A**ttainable and Attractive to media.
- **R**ealistic, Relevant, Reliable.
- **T**imely feedback.

Why should I bother with indicators?

Measuring indicators over time can help you:

- Evaluate if you are achieving your objectives and goals.
- Prove to funders that you are making progress.
- Communicate your progress and results to the community.
- Evaluate your project.
- Revise project strategies.
- Plan next steps.



TOOL #12: HEALTH ASSESSMENT SURVEY

This tool will help you plan a health assessment survey, also known as a questionnaire, that is right for your community.

Community health surveys can be a useful way to investigate the health questions you have within your community. Depending on what you decide to focus on, a survey can help identify characteristics of health and strategies for improving health. For example, if you find that there are particular health concerns that are only found in one part of town, this may lead to finding a particular source of contamination in that area. Alternatively, you may identify a treatment for that health problem and use the data that you have compiled (for example, number of people with the ailment) to advocate for resources to set up a clinic or wellness center to help address the problem.

Focusing the survey

Surveys can be energy intensive, requiring people, time and financial resources. It is important to keep your survey focused. You want to design a good quality survey that can be completed without taking up too much participant time, but has enough depth and critical questions to provide useful information to answer your key question(s). Ideally you will get all the information that you need for your analysis in your survey, so you don't have to go back to the same people with more questions later.

Based on the strategies you have chosen, you may be able to narrow your question down to help focus your survey. For example:

- Your main question may be related to lead exposure of children, and the possibility of using blood lead testing services. You can tailor the survey to get answers that will help fill in knowledge about specific topics related to lead. The sample survey provided at the end of this tool, focuses on child health and lead exposure.
- You want to see if there is broader community support for a potential project strategy. For example, if you want to start a wellness centre, you may want to prepare a survey asking what ideas people have for this, what program areas would need to be included, and where resources might be found.
- You may want to conduct a standard health or function test, such as the simple lung function test, and take averages of different ages to compare if

there have been cumulative health effects.

- If your process so far has identified a lot of unknowns, you may wish to cast a wider net and keep your topics more generally focused to allow for new information to surface.

Conducting background research

You may need to do some research to better understand what survey questions will improve the soundness of your findings. For example, your research could explore the kinds of health effects you might expect to find as a result of the contaminants you are concerned about, or the kinds of programs or treatments that are offered elsewhere. Additionally, you need to consider where conflicting information might arise. For example, if you are concerned about lead from the mine, you should also think about exposure to other sources of lead, such as lead paint in older houses, lead in ceramic glazes, lead in toys, batteries, lead in house water pipes or a landfill nearby.

Selecting information types

Consider a variety of types of information that may be appropriate to include in your survey. The type of information you want to gather will inform the way you write the survey questions.

It is important to gather basic population information (demographics) for an individual or family (for example, gender, age, type of employment, economic status, duration lived in the area, pregnancy history). This information is helpful because there may be different health concerns that arise within specific demographic groups, and strategies can be tailored to specific groups.

Depending on your project and strategies, the following types of information may be useful:

- Demographics (contextual information.)
- Health information (individual, family.)
- Lifestyle factors (health habits, food and water sources, occupation.)
- Community services (access to health services or programs.)

Some information may be quantitative (have numbers associated with it), or it could be qualitative (descriptive). For example, “number of missed school days” is quantitative information, as compared to qualitatively describing your child’s general health as “excellent, good, fair or poor.” These two approaches provide similar information, but they give a different sense of the child’s health and the resulting effect in the child’s life. Sometimes a combination of the two approaches works well together.

Comparing study and control populations

The study population is the group of people you wish to study. When you developed your project strategy, you may have identified a study population, or you may not have thought about that question. Take a moment now to reflect on whether you want your survey to be representative of the entire community, or whether you want to focus on a sensitive subgroup of the community.

Examples of subgroups you might focus on can be based on:

- Gender (male , female or both.)
- Age (adults, children, teenagers, elderly.)
- Lifestage (families, babies, toddlers, children, puberty, seniors.)
- Sensitive populations (disabilities, hospitalized, elderly, chronic illness.)
- Duration lived in the area (long term, intergenerational, new arrivals.)
- Geographic boundaries (direction of wind from an airport wind rose map, proximity to water bodies, distance from mine.)
- Occupation (mine workers, people who have jobs that may involve similar exposures, for example to dust or metals.)

Be aware that the selection of certain subgroups may affect your study design. For example, special efforts may be needed to involve people who work night-shifts at the mine. Think through the challenges and develop strategies to address them as best you can.

The control group is the study population that you consider to be unaffected by your topic of interest (for example, lead exposure from mining-related dust). You will compare your findings on the affected population to this unaffected group.

Your choice of a control group could be based on geography, occupation, potential exposure to contaminants, or any other factor that is relevant to your study.

Example of study vs. control groups

Study group	Control group
Women eating fish from the creek that receives mine waste water	Women who don't eat fish from the creek.
Family that has a member who works at the mine	No family members work at the mine
Homes are downwind from the mine	Homes are upwind from the mine

Try to choose a group that is otherwise very similar to your study group of interest. Look at the lifestyle and life stage aspects that could influence health. Try and include everyone if the community is small and you have enough resources. Otherwise use a random sample so that your findings can be extended to a broader population, this can be done using a voter's registry or street addresses and follow a random number sequence from a calculator. The number of people you survey will depend on what you can afford to invest in time and analysis.

This is a strategy for which you may want to seek expert help in designing your survey and analyzing the results.

Providing confidentiality and consent

Confidentiality is important in preparing and carrying out a survey. You want to be able to assure people that their personal information will not be identifiable so that they can feel comfortable participating fully in the survey. Otherwise, people may not be willing to answer questions about sensitive information. The people conducting the survey must be trained to understand the importance of confidentiality and to help participants understand the survey process.

Consent forms can be used as a way to explain the survey process, and as a way to ensure that all participants are fully informed before agreeing to participate. See Child Health Survey (at the end of this tool), for a sample consent form. The consent form describes the survey process, the duration of the survey, who is doing the survey, the expected use of the survey, etc. It must clearly describe what participants are agreeing to when they sign the consent form.

TIPS — CONSENT FORMS

Write your consent forms in language that is easy to understand. Translations or interpretations may be necessary

Make sure that your contact information is included on the form.

- When you provide the participant with a copy of the consent form, you may want to include outreach information that relates to your project, as well as information that answers some of the questions that might arise as a result of the survey questions.

Guarantee that anyone who is interested in the final analysis from your survey (for example a report) will be able to get that and explain how they can get your analysis.

When the survey is completed, the consent form will be stored separately from the survey. It is good protocol to keep confidential materials, such as the surveys and consent forms, in a locked file cabinet that is only used for your project.

To ensure participant confidentiality, make sure that you do not have an individual's name written on any survey form. But you do need some way to track information about that participant. Assign an "identification number" or "ID#" to each survey. If you analyze data with a computer, use this ID# instead of a person's name.

What can be included in an identification (ID) number?

- A number corresponding to the participant's name, in case you want to contact an individual for follow-up or medical purposes.
- A number corresponding to each family, if you think members of extended families will need to be grouped together at some point.
- A number for each person conducting the survey, if, due to bias or another reason, you need to review all of the information collected by a particular interviewer.
- A number to record information that may be useful for your data analysis, such as geographic location, whether the participant is in the study group or the control group, etc.

Here's an example. In ID# 14-2-2, 14 is number assigned to the participant, 2 is the number assigned to the person conducting the survey, and 2 indicates that the participant lives upwind from the mine (1 would indicate that they live downwind).

TIPS — IDENTIFICATION NUMBERS

Make sure that identification number information is not stored in the same location as surveys. You may want to assign one of the core group members as the "holder of the ID information." This is especially important if you decide to assign an ID# to a participant's name.

Your ID# can be prepared ahead of time on labels that can be easily peeled and stuck on the survey.

Preparing the Survey

As you begin to design survey questions, think about the key health concerns

and project goals that led you to the strategy of developing a survey. You need to be clear on what questions you want the survey to help you answer or what information gaps you want to fill.

Here are some things to consider when formulating survey questions:

- Keep the language and the questions simple.
- Don't use medical jargon that people don't understand. Instead, describe the symptoms that may be of interest in the survey.
- Ask questions within a reasonable time frame. For example, rather than asking "How many days of school did your child miss in the last year", you may want to shorten that to "in the last month." Last month is recent enough to remember, yet still provides information on the frequency of missed school-days.
- Design questions that are open to cultural differences that might exist within your community. For example, some people may go to doctors or clinics for health care services, others may go to naturopaths or traditional healers.
- If questions are complex, ask them in multiple stages to avoid too many ideas in one answer. For example: "On a scale of 1 to 5, with one being poor and 5 being excellent, how would you rank the air quality in your community?" could be followed by "How frequent is the occurrence of poor air quality?" This could be followed by a qualitative question on how health differs on good and poor air quality days.
- Try to order your questions so that they are grouped by similar topics and have a logical flow.
- You may want to ask questions that are easy to answer early in the survey. More sensitive information may work better later in the survey, once rapport is built between the participant and the surveyor.
- If there are questions that are extremely sensitive (personal or cultural), you may want to provide the option of allowing the individual to provide you with written responses. This is not likely to be necessary for most questions when a survey is conducted in a private home or location.
- Design the survey to minimize the amount of work for the person conducting the survey. For example, use check boxes whenever possible.
- Design the survey so you can easily process and analyze the responses.
- Leave sufficient space where verbal answers may be provided.

Auditioning the Survey

Always audition your survey before you finalize it. Try it out on friends or colleagues. When you do this, both you and your pretend participant should think about the following:

- Is the language confusing?
- Is the sentence structure too complex?
- Does it flow well, or does it need to be re-organized?
- Is it too long? (note: record how long it takes to complete the survey)
- Are there any leading questions?

If it seems short, you may be tempted to add in a few more questions, but only do this to include something important. A concise survey will be easier to conduct and process.

Finalizing the Survey

Once you have revised your survey –based on the results of your survey audition– take some time to be sure you are happy with it. Look at the information you will get from your survey results. Will it provide you with the kind of information you need to move forward with your strategies? Is there enough depth to provide direction once the results are compiled? Is there a mix of qualitative and quantitative information? Will you be able to process the information with the resources that you have (time; people, resources to hire data analysts)? These are important questions to consider before you put effort into taking the survey to your community.

When designing the survey protocols, you may want to colour code the surveys for ease of identification of different groups that are important in your survey. For example, if you have a yellow survey for children, you can easily supply that to families with children and do not need to give it to families without children. If different regions of the community, or distance from the mine is of interest, colours may be identified for that as well. It helps in keeping survey forms organized during the data entry phase.

Keep in mind that there are many pieces of work that can contribute to the survey, telephone calling, driving, child care, helping with the questionnaire, checking the completeness of the questionnaire, photocopying, and data entry. While some of these jobs may be done by volunteers, try to find resources to pay local community members to be involved and supported to participate.

Keep them informed about the importance of their contributions. Help them to understand all the steps of the process to make it exciting and a learning experience.

Child Health Information

The following questions should be answered for every child in the family.

Child's Initials: _____ Age: _____ Gender: Female Male

Does your child play outdoors?

Almost every day (weather permitting) 3-4 times a week Not often

Does your child attend school or day care (check all that apply)?

school nursery school day care Other _____

Overall, how would you rate your child's health?

- Excellent, seldom, if ever, sick
 Good, occasionally sick, no major health problems but not ideal health.
 Fair, sick more than most children or limited in a few activities
 Poor, get sick often, illness limits many activities
 Very poor, always sick, chronic illness, limits activities.

How often does your child visit a healthcare provider?

<once/year 1-3 times/year 3-6 times/year monthly Other _____

Compared to other children the same age, how would you rank your child's:

Sociability? very somewhat rather play by themselves

Hand-eye coordination? excellent average some difficulty

Attention span? excellent average some difficulty

Memory? excellent average some difficulty

Agitation or anger easily? rarely sometimes often

Hyperactivity? rarely sometimes often

Schoolwork or reasoning? excellent average some difficulty

Drawing skills? excellent average some difficulty

Comments: _____

Has your child been tested for blood lead levels? Yes No

If yes: Where was the lead test done? _____

Who paid for the test? _____

Where did you find out about testing? Doctor school Other _____

Was it difficult to get blood lead testing for your child? Yes No

Why/why not? _____

At what age(s) was your child tested? _____

What were the results? BLL < 10ug/dL BLL > 10ug/dL Lead level _____

What was the follow up? None Doctor Nurse

Specifics _____

How effective was follow up? Excellent Adequate Poor

What additional follow up would have been helpful? _____

If your child has not been tested for blood lead levels:

Have you heard about lead testing for children? Yes No

If yes, where? Doctor School Other _____

Do you want to test your child's lead levels? Yes No

Why/ Why not: _____

Lead Related Services

Do you think the following services are adequate or inadequate to meet the health needs of the community?

	<u>Adequate</u>	<u>Inadequate</u>	<u>Don't Know</u>
# of doctor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
# of community nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shelters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospital availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Government Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Education Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Municipal Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Food and Water

Do you eat any food that is not purchased at a grocery store?

local fresh fish Types: _____

local garden Types: _____

local farm Types: _____

Other _____

None

What is your primary drinking water source?

well bottled water company (name _____) use water filter

Other _____

Perspectives

Do you think exposure to lead is a health concern in area? Yes No

How would you rate your level of concern about lead impacts on child health?

very concerned somewhat concerned not concerned

Do you worry if there are contaminants in your food or water? Yes No

If so, how often? often sometimes rarely never

What source of pollution is of greatest concern in area?

Closing

Additional Comments: (use the back of the form if more room is needed to answer the question)

Would you like a summary of the study findings mailed to you? Yes No

(provide envelope to write address on for future mailing)

*Thank you for your participation in this area child health survey. Please be assured that all personal identifying information gathered through this survey will be kept confidential. Only statistical results and unidentifiable information may be made public. If you have any questions or concerns, please contact:
(Name, email, phone number.)*



TOOL #13: DATA SOURCES

This tool is an introduction to researching and gathering environmental data. There are a number of different ways to access data and information related to environmental impacts (such as pollution) in your community.

Phone: The phone is useful for helping to locate information. Talk to people who might know something (company representatives, government employees, local government officials). But don't ever rely solely on verbal information – for example, if someone tells you that the mine is releasing waste water with arsenic into streams, you should ask them how they know that, and get something in writing (if they say that they saw the information in a report produced by the mine, try to get a copy of that report).

Internet: The internet has become a popular tool for gathering information. Many government agencies and companies will post documents on their web sites (for example, companies will post annual reports; and government agencies may post copies of mine permits or environmental assessment documents). If you can access official documents on-line, it is the fastest and easiest method for obtaining this information. As well, many newspapers or investment web sites post articles that may contain information about the mine. If you are going to use information from the internet, be sure that it comes from a credible and objective source. It's okay to look for leads from "non-objective" web sites, but you should try to find a second, more reliable source to substantiate the information – especially if you plan to share that information with the community.

Government Files: Not all information that a company files with the government is available on the internet. So you may have to take a trip to some government offices to get photocopies of the information. Or, you may be able to order copies that can be mailed to you. Be aware that many government agencies charge money to photocopy or mail out information.

Library: Sometimes, local libraries will have copies of mining-related environmental documents such as Environmental Impact Assessments. Additionally, libraries have databases that you can search to find scientific or health-related data and studies. Be sure to ask the librarian which databases to

search, as there are many, and it can be confusing and time-consuming to search them all. Some libraries allow you to access their information on-line.

Where to find environmental data

Environmental Impact Assessment documents

When mines are initially proposed, the mining company typically has to file documents with the government that provide background information on the project. Of particular interest are any background or baseline studies that were conducted on air and water quality, vegetation and wildlife populations. These baseline studies provide a snapshot of what the environment was like before the mine started operating. Baseline data is important to be able to compare before and after conditions of the environment. For example, if you believe that mine waste is harming the fish in a stream it is important to know what the conditions in the stream were, including number of species present, size, number of fish and concentrations of metals in fish and in the water, before the mine began operating. If you are then able to prove (through a study) that the numbers or size of fish has declined since the mine started operating, then you may have a good argument to suggest that the mining waste has had an effect on the health of the fish or the health of that stream.

Environmental studies

It is possible that government agencies conduct studies at some point after the mine has started operating. They may not have been designed to gather the exact information that you are seeking.

Monitoring data

It is possible that the mining company may be required to monitor air emissions, waste discharges and water quality in streams or other water bodies affected by the mining operation. This information is submitted to the government agency that regulates air, waste and water. Someone within the agency is supposed to review the company's monitoring data, and record information such as: occasions when the company exceeds its allowable emissions; or times when the concentrations of contaminants in water are higher than allowed by the company's permit (or other regulations). Find out who is responsible for reviewing this information, and talk with them about whether or not the company is able to meet the requirements in its permits. You may want to review, or hire someone to review the monitoring data (especially if you can pinpoint events, such as days

or months when the air quality seemed particularly poor).

Permits

In Canada, mining operations are regulated at the provincial level, although some federal regulations also apply. Natural Resources Canada (NRCAN) web site provides links to the primary government agencies that regulate mines in each of the provinces. Link to the NRCAN web site here:

http://www.nrcan.gc.ca/miningtax/inv_6b.htm

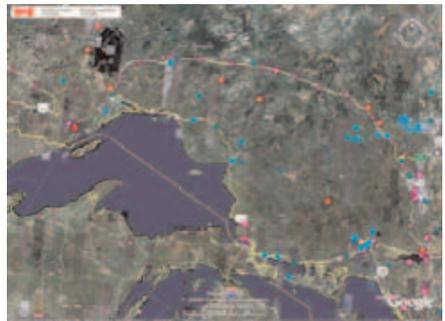
There may be a number of different agencies within the government that issue permits for mining operations. Typically, there is a Ministry of Mines (or some similar name) that issues permits for mining infrastructure, while a separate ministry (such as Ministry of Environment) may be responsible for issuing permits related to the release of mining wastes.

It can be difficult to understand the tangle of regulatory agencies. The simplest way to gain clarity on how the mine is regulated is to call up the Ministry of Mines (or similar agency) and ask to speak to someone who can tell you how the mine is regulated.

If the company is allowed to discharge contaminants into the air, they may need to obtain a permit. To obtain copies of the permits, call up the provincial department in charge of regulating air emissions (often part of an “Environmental department”). Similarly, companies may need to obtain water “discharge” permits, if they are releasing wastes into streams or water bodies.

National Pollutant Release Inventory (NPRI)

The NPRI is Canada's publicly-accessible inventory of pollutants released, disposed of and sent for recycling by facilities across the country. The NPRI system allows you to search for facilities in your community, and download information on the amount of pollutants released to air, water or land from the various facilities.



Sample GoogleEarth Map of Polluting Facilities

You can also create a map in GoogleEarth, that allows you to zoom in on your community, and get pollution information on the various facilities (by clicking on the dots represented by each facility).

- For general information on NPRI, go to: <http://www.ec.gc.ca/pdb/npri/>
- For information on NPRI mapping, go to:
http://www.ec.gc.ca/pdb/npri/npri_google_earth_e.cfm

ADDITIONAL RESOURCES



- “Health and Environmental Effects of Trace Elements in Metal-Mining Wastes.” Center for Science in Public Participation.
http://www.csp2.org/reports/Fact_Sheets--Trace_Elements_in_Mining_Waste.pdf
- Vashon Island Heavy Metals. Institute for Environmental Research and Education. (Including resources such as “Heavy Metal Handbook - A Guide for Healthcare Practitioners”; and Arsenic, Cadmium and Lead Exposure.) <http://www.iere.org/vashon-metals.html>
- “Harm from Toxic Chemicals” Chapter 16 and “Mining and Health” “Chapter 21 in *A Community Guide to Environmental Health* by Jeff Conant and Pam Fadem. 2008.
http://www.hesperian.org/publications_download_EHB.php

NOTES



TOOL #14: ENVIRONMENTAL SAMPLING AND DATA

Communities that are concerned about contamination coming from a mine may want to collect environmental sampling data.

Before you begin, determine what information already exists (See Tool #13: Data Sources), what information can be collected within your budget, and with your skills and time available, and how that information may be of use in your community health plans and strategies.

The first step in evaluating the potential for contaminants to affect human health is to identify the most likely ways that people may have been exposed.

Understanding the contaminant “sources,” “sinks” and “exposure pathways” can help you hone in on the most likely causes of health effects. It is also good to look for clues that the environment may have been affected by contamination, such as changes in the quality of water, soil, air, wildlife habitat, wildlife numbers, and the health of animals and vegetation.

Sources

The term “sources” can refer to two things:

- The originating processes or materials that discharge contaminants into the environment (for example, smelters, tailings piles, other industrial activity.)
- The intermediate storage points in the environment (soils, dust, water, food, living organisms.)

The mine may be one of many sources of contaminants in your community. It is important to consider all of the potential sources, so that you know whether or not the mining operation is the primary cause for concern. It may be that another source, such as a pulp mill, may be emitting more hazardous pollutants

TIPS – OTHER SOURCES OF ENVIRONMENTAL DATA

Look for information on potentially polluting industries or activities in your community. Sources of this type of data include:

- Provincial agencies that regulate the emissions or release of wastes into the environment.
- The federal National Pollutant Release Inventory (See Tool # 14: Data Sources.)

than the mine.

It is also important to think about *cumulative environmental effects* from various sources. For example, the mine may be emitting levels of sulphur dioxide that pose a threat to human health; but if there is another industry also emitting sulphur dioxide, together, the air emissions from the two industries together may be creating unhealthy levels of that pollutant in your community's air.

Sinks

Contaminants released from various processes end up somewhere, either temporarily or permanently. For example, metals released from a smelter stack will initially end up in a community's air, surface waters, sediments and soils. Over time, the metals may build up in dust in people's homes; in vegetation that grows in the contaminated soil; in aquatic organisms that live in contaminated waterways; and in the bodies of humans, livestock, pets or wildlife that eat contaminated vegetation or fish, drink contaminated water, or breathe contaminated air.

Look for data on concentrations of contaminants in the community's air, water, soil, vegetation, wildlife and homes. (See Tool # 13: Data Sources) If there are no data, or the data that exist do not tell you what you want to know, consider doing your own sampling.

Exposure pathways

Even if contaminants are present in the environment, they will not necessarily cause health effects. For health impacts to occur, the contaminants must enter the bodies or tissues of living organisms.

The term “exposure pathways” refers to the ways in which contaminants move from sources (a mine site) to receptors (humans). This can include the settling of airborne dust onto surfaces in the home, or uptake of soil contaminants by vegetables.

“Exposure routes” are the means by which contaminants enter the receptor, such as ingestion of contaminated material, inhalation, or absorption through the skin. Once taken into a body, metals and other contaminants are processed by the body in a variety of ways. Some may be readily excreted, while others may be stored in bone, breast milk or fat tissue.

It is useful to understand the dominant sources, pathways and routes of exposure before developing remediation plans. This information will help you focus on corrective measures that are likely to provide the most benefit.

Mine Monitoring

An aquatic mine monitoring manual was developed to help you through a “spot check” approach to environmental sampling (not long term monitoring).

This manual provides guidance on how to determine the main sources of contamination and levels of pollution caused by a mine. Protocols for inexpensive field testing and follow-up “hot spot” sampling are described.

The manual also explains fieldwork preparation, equipment, and laboratory analysis. The manual is available at:

<http://www.eprf.ca/eprf/mlf/documents/minemanual.pdf>



TOOL #15: SAMPLE PROJECT INFORMATION SHEET

When you start to move into the community to carry out your project, it is helpful to have a one-page sheet of paper (or a flyer) that you can hand out. The flyer should include key information about your project such as:

Background to the Project:

We are conducting a community-centred health assessment project in order to improve community health. We are focusing on the impacts of dust from the mine on community health and on the impacts of shift work on family health.

Background to the Core Group:

We have come together as a core group to carry out this community health assessment. Our names are _____.

Definition of Health:

We are using the World Health Organization's definition of health as not merely the absence of disease, but the complete social, psychological, spiritual and physical well-being of individuals, families and communities. Our approach to health focuses on the individual's views of their own well-being, and that of their community.

Vision Statement:

Our vision of a health community is _____.

Confidentiality:

Any information we are given will not be attributed to a particular person. In other words we will not be using any names in our reporting on this project.

Access to information from this project:

The findings of this project will be made available to the public at the following web site: _____ [Note: you may have a different way in which you will make the findings public, for example through a community meeting.]

You can also approach any members of the core group for updates on the project at any time.

You can also contact [name and number] for an update on this project.

NOTES

NOTES

NOTES



MiningWatch Canada

Mines Alerte