

CANADA AND THE SWINE FLU

Introduction



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Focus

In the spring of 2009, a particular strain of the H1N1 influenza virus spread rapidly around the globe. This prompted the World Health Organization to declare that the world was in the midst of an influenza pandemic. This CBC *News in Review* story explores what we know about H1N1 and what we have learned from past influenza epidemics, and reviews Canada's preparations for dealing with H1N1.

On June 11, 2009, the World Health Organization (WHO) declared a level-six alert for the H1N1 influenza, nicknamed the “swine flu.” This organization, a branch of the United Nations that monitors disease outbreaks worldwide, took this dramatic step because of clear evidence that swine flu had become a pandemic—an epidemic of a potentially deadly disease that had taken on global proportions. The WHO’s declaration followed a serious outbreak of swine flu in Mexico in April 2009, which had resulted in widespread panic and over 150 deaths in that country. By the end of that month, the potentially deadly form of influenza had reached Canada, brought back by vacationers from Mexico, including a group of high-school students from Nova Scotia who were immediately placed under quarantine.

One month later, a serious case of the disease was reported in Alberta, only this time the victim, who required hospitalization, had not travelled to Mexico before becoming ill. This development led to a rising level of concern among federal and provincial health-care agencies, which had previously sought to calm Canadians’ fears by stressing that the disease was rarely deadly and that its symptoms were usually mild and transitory. But now scientists who study viruses such as H1N1 were cautioning that it was

capable of mutating into a more virulent and potentially lethal form that could pose a serious threat to the health of Canadians once the traditional flu season began in the fall of 2009.

By the time of the WHO’s pandemic alert, there were approximately 1 800 confirmed cases of H1N1 in Canada, occurring in every province except Newfoundland. Most of those who came down with its symptoms, which included fever, weakness, pain in the joints, dizziness, and coughing, were people between the ages of 20 and 40 who had been previously healthy. However, the most serious cases usually involved individuals who already suffered from underlying health problems such as obesity, asthma, or diabetes. Pregnant women were also believed to be particularly at risk.

By the end of August 2009, only three swine flu deaths had been reported in this country. But health authorities were especially concerned that the disease appeared to be far more prevalent and potentially deadly among Canada’s First Nations people. As governments at all levels prepared for the worst, health authorities hoped that H1N1 would not represent a serious health emergency for Canadians, as was the deadly 1918 influenza epidemic that had killed over 50 000 in this country and countless millions worldwide.

To Consider

Before watching this story, ask yourself what you already know about H1N1, or swine flu. Where did you acquire most of this information (print news, radio, television, the Internet, government agencies, friends or family members)? Are you personally concerned about the potential impact of swine flu or not?

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Viewing Guide

Did you know . . .

One of the mysterious aspects of swine flu is that, unlike other forms of influenza, it seems to strike younger, previously healthy people more than the elderly, who are usually the most at risk. No one really knows why this is so.

Pre-Viewing Activity

Before you watch the video, discuss the following questions with a partner or in a small group: What is swine flu? How is it different from other forms of influenza? How does it spread? Where and when did the latest outbreak begin? Why are health agencies and medical experts so worried about it? Which groups of people are most at risk? What can you do to protect yourself from infection?

Viewing Questions

Answer the following questions in the spaces provided.

1. Why is H1N1 considered to be a "composite" flu virus?

2. What steps did the Mexican government take to control the spread of H1N1 when the virus broke out in that country in April 2009?

3. What Canadians were the first to contract the disease? Where had they likely become infected with it?

4. Why did medical authorities consider the case of a young girl in Alberta who became ill from swine flu in May 2009 to be particularly serious?

5. According to some predictions, how many Canadians might require hospitalization from H1N1? How many could die?

6. When is a vaccine for H1N1 expected to be ready? By when might it be available for anyone in Canada who wants it?

7. What groups of Canadians are considered to be priority cases to receive the H1N1 vaccine?

8. Why are young people between the ages of 20 and 40 considered to be particularly vulnerable to the disease?

9. Besides receiving a vaccination, what other steps can Canadians take to minimize the risk of contracting swine flu or any other virus?

10. What emergency measures have governments put in place to deal with a serious outbreak of the disease expected in the fall of 2009?

Post-Viewing Activities

After you have watched the video, discuss and respond to the following questions. Your teacher may choose to place you in a small group with other students.

1. Based on what you have seen in the video, do you think that governments in Canada have prepared themselves adequately for a serious outbreak of swine flu? Why or why not?

2. Do you think that the worldwide concern over the dangers of swine flu is exaggerated? Why or why not?

3. What groups of Canadians do you think should be considered priority cases for receiving swine flu shots once the vaccine becomes available to the public? Explain the reasons for your choices.

4. What potential effects do you think a very serious outbreak of swine flu, such as the 1918 influenza epidemic, might have on Canadian society?

5. What steps do you think governments would be required to take in order to minimize or control the consequences of a serious swine flu epidemic in Canada?

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H1N1 Virus: An FAQ Sheet

Did you know . . .

The last epidemic to strike Canada was Severe Acute Respiratory Syndrome (SARS), in 2003. SARS initially broke out in the Toronto area but spread across the country. By the time the epidemic was over, dozens of Canadians had died from SARS.

There are a number of common misconceptions associated with the swine flu. One of these is that humans can catch H1N1 from eating pork. The following information should be helpful in clearing up some of the misinformation surrounding the virus.

What is the difference between an epidemic and a pandemic?

An epidemic is a disease affecting a large group of people living in the same area at roughly the same time. The U.S. Centers for Disease Control and Prevention (CDC) prefers the less sensational term “outbreak” in order to avoid alarming the public. The World Health Organization (WHO) defines an epidemic as “the occurrence of cases of disease in excess of what would normally be expected in a defined community, geographical area, or season. An outbreak may occur in a restricted geographical area, or may extend over several countries. It may last for a few days or weeks, or for several years” (“Swine Flu FAQ,” www.cbc.ca/health/story/2009/04/24/f-swineflu-faq.html).

A pandemic is an epidemic on a global scale. According to the WHO, “an influenza pandemic occurs when a new influenza virus appears against which the human population has no immunity, resulting in epidemics worldwide with enormous numbers of death or illness.” Illnesses such as the common cold and seasonal influenza, which are prevalent at all times but do not reach epidemic proportions, are referred to as “endemic” diseases.

What is swine flu?

The official name for swine flu is the H1N1 influenza, after a new viral strain

that had not previously been found among human beings. This H1N1 virus was first detected in March 2009 when it began infecting people in Mexico. However, H1N1 is very similar to the virus that triggered the worst pandemic in history—the 1918 “Spanish flu” that killed millions of people in the months after the First World War. (You can learn more about the Spanish flu in the section The “Spanish Lady” on page 27 of this guide.)

H1N1 is known as a “composite” virus, meaning that it is a combination of four different strains of influenza—one found in birds, one in humans, and two in pigs, or swine. Thus, it is not strictly correct to refer to H1N1 as “swine” flu, but the name has stuck.

Why is there so much concern about swine flu?

Every year thousands of people contract what is known as “seasonal” influenza, or the flu. In Canada the flu season usually begins in the fall and peaks during the coldest months of winter. While the vast majority of people recover from the flu after a few days of rest and medication, there are always some people who die from it—usually the elderly or people with weak immune systems. Medical authorities are particularly worried about H1N1, however, because it is a newly mutated influenza strain that has not appeared before in humans. This means humans have no immunity against the strain.

As well, for some reason the swine flu seems to strike people between the ages of 20 and 40 who were previously healthy. This is usually a population that is not considered to be at risk of serious complications from influenza.

Note

Like all forms of influenza, swine flu is a respiratory infection that attacks the lungs. It can cause death from pneumonia or secondary infections causing failure of the body's vital organs.

Can swine flu be spread by eating pork?

Swine flu is mainly spread through human-to-human contact such as sneezing or touching. It is not transmitted by consuming food. In May 2009 the WHO declared that it was safe to eat pork, provided it was properly stored and cooked. It is also impossible to contract the disease by eating fruit, vegetables, or other products imported from countries such as Mexico, where the initial outbreak of H1N1 began in April 2009. Despite these warnings, pork producers' associations in Canada and elsewhere reported a sharp decline in the sale of their products in 2009 because of the growing concern over swine flu infection.

What are the main symptoms of swine flu?

The main symptoms are similar to those in other forms of influenza, such as fever, weakness, coughing, and soreness of the joints. Some people also experience a sore throat, runny nose, nausea, vomiting, or diarrhea. But unlike other

forms of influenza, H1N1's symptoms can be much more severe, longer lasting, and serious enough to require hospitalization in some cases.

Can swine flu be treated?

A vaccine against swine flu is in the process of development and is expected to be tested on humans in September 2009. If the tests are successful, it is anticipated that sufficient quantities of the vaccine can be produced to provide immunization for groups believed most at risk from the disease—health-care professionals, pregnant women, young people, and those suffering from medical problems such as diabetes or asthma—by late fall. The Public Health Agency of Canada (PHAC) expects that it should be possible to provide immunization for anyone who desires it by the end of 2009.

Sources: "Swine Flu FAQ," www.cbc.ca/health/story/2009/04/24/f-swineflu-faq.html, and "Pandemic preparation: dealing with infectious disease outbreaks," www.cbc.ca/health/story/2009/04/24/f-fluprep.html

Analysis

Record some common misconceptions about the swine flu. Where do you think these misconceptions came from? What projects to promote greater awareness of the dangers posed by H1N1 might you be able to initiate in your school or classroom?

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Canada's Pandemic Preparedness

Quote

"We don't hear a plan for what will happen from now till November in terms of antiviral drugs. But we mainly don't hear a plan from 15.4 million doses in vials somewhere to how we're going to get those into Canadians' arms. And in what order and who's going to do it."
— Dr. Carolyn Bennett, opposition Liberal Party's health critic (www.cbc.ca/health/story/2009/08/17/swine-flu-czar-cmaj.html)

Canada has developed a detailed plan for dealing with a possible H1N1 epidemic. The plan is the result of consultation between the federal and provincial governments. It is titled "The Canadian Pandemic Influenza Plan for the Health Sector" and is accessible on the Web site of the Public Health Agency of Canada (PHAC) at www.phac-aspc.gc.ca.

The government believes that the pandemic preparedness plan puts the country in a good position if or when the pandemic hits. But there are critics of the plan, including the Canadian Medical Association. As you read the following information, identify the strengths and weaknesses of the plan.

Impact of an Influenza Pandemic in Canada

PHAC authorities admit that it is impossible to predict when the H1N1 pandemic will strike or how serious it will be when it does. However, they are fairly confident that it will begin in late 2009 and spread during the traditional winter flu season. It is likely to last for at least one year, with more than one wave occurring during this period. Each wave is expected to last between six to eight weeks.

During this time, up to 70 per cent of the population may become infected with the disease, but only 15 to 35 per cent will become ill enough to require time off from work for at least one day. If such a pandemic occurs, and if sufficient quantities of vaccine and/or antiviral drugs are not available, up to half of those who are clinically ill may require outpatient care, one per cent will need hospitalization, and 0.4 per cent will die. Individuals who contract swine flu and recover from it will be immune from

further infection from this virus.

If the swine flu causes illness in 35 per cent of the population, then businesses could anticipate absenteeism rates of up to 25 per cent during the worst two-week peak period of the pandemic. Some people will be too ill to work, while others will need to take time off to care for sick relatives at home. School closures and other emergency public health measures such as restricting or banning public meetings and gatherings like sporting events or concerts may also have to be considered.

Estimated Health Impacts of a Pandemic in Canada

A moderately severe pandemic may cause the following:

- between 11 000 to 58 000 deaths
- 34 000 to 138 000 cases of people requiring hospitalization who recover
- two to five million people requiring outpatient care from a doctor
- 4.5 to 10.6 million becoming clinically ill

This means that if a sufficient vaccine or other antiviral drugs are not available, up to one-third of the total population of Canada could be affected by a swine flu pandemic.

Key Components of the Pandemic Plan

The first element of an effective response to a possible pandemic is to be able to identify the new strain of the virus quickly and prepare a vaccine to combat it. Since the SARS epidemic of 2003, Canada has become far better at identifying and tracking new viral strains such as H1N1. It has also improved its pandemic alert system, with the Global

Quote

“We have a new plan, we have more resources, we have more personnel, more technology, more know-how, and a better understanding of how to deal with these kinds of things.”
— Ontario Premier Dalton McGuinty (cbcnews.ca, April 28, 2009)

Public Health Intelligence Network (GPHIN) providing continuous updates worldwide, seven days a week, over the Internet.

Canada is one of the few countries that is developing and manufacturing a new vaccine against H1N1. However, this medication may not be available when the pandemic first strikes, and it may take some time to produce sufficient quantities of the drug to inoculate the entire population. Meanwhile, there is an existing supply of antiviral drugs that are effective in treating people who become ill from the disease, and this stockpile is being increased.

Health officials at the federal and provincial levels are also working to raise public awareness about how to fight the disease, including education campaigns to promote good hygiene practices such as frequent hand washing and maintaining “social distancing” by restricting human-to-human contacts to the minimum necessary for everyday life. In some cases, individuals who become ill from the disease will require isolation, but a large-scale quarantine program is not seen as practicable.

Follow-up

1. What do you think are the most important elements of the federal government’s pandemic plan? How effective do you think they will be when a serious swine flu outbreak occurs?
2. Do you think a country can ever be adequately prepared for a health pandemic? Explain.

Response to the Government’s Plan

After the government released the pandemic plan, the Canadian Medical Association (CMA)—a group representing Canada’s physicians—issued an editorial in August 2009 calling for the appointment of a “health-care czar” with emergency authority to deal with an H1N1 outbreak. Such an individual would need to have greater powers than the chief public health officer in order to take rapid action and co-ordinate the activities of various levels of government to fight the disease. The current chief public health officer, Dr. David Butler-Jones, is an appointee of the federal government and does not have any authority over provincial health-care bodies.

The CMA editorial also recommended that the government quickly identify vulnerable groups in the population and develop ways of vaccinating them. As of August 2009, the government had yet to develop such a plan.

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First Nations Communities

Quote

"Access to necessary health-care services is an ongoing problem for many indigenous people around the world, and Canada is no exception. But universal health care and non-insured health benefits (which First Nations and Inuit individuals receive in Canada) don't mean anything if you live somewhere you still cannot get household plumbing, let alone a visit to the doctor." — Jessica Yee, ("Canada's swine flu shame," www.guardian.co.uk/commentisfree/2009/jun/30/swine-flu-canada-first-nations/print)

As the first cases of H1N1 were reported in Canada in the spring of 2009 a disturbing pattern began to emerge. Many of the cases were occurring in isolated First Nations communities, such as the Stony Lake and St. Theresa Point reserves in northern Manitoba. Nunavut was also reporting a number of confirmed swine flu cases, with 405 of the territory's total population of 31 000 residents infected with the disease and 40 requiring hospitalization. This rate of infection was nine times the national average. In addition, most of the victims of the virus were under 10 years of age, significantly younger than in other parts of Canada.

Explaining the Disparity

According to Isaac Sobol, Nunavut's Chief Medical Officer of Health, serious problems of overcrowding and malnutrition in Aboriginal communities were contributing to the swine flu outbreak. As he notes, "it's common sense that these conditions provide a breeding ground for the spread of disease. And that helps explain why the transmission of novel H1N1 has been phenomenally efficient" (www.cmaj.ca/earlyreleases/23july09_aboriginals.shtml).

Criticism of the Government

Many people in the medical community and in Aboriginal communities have criticized the government for not doing enough to help vulnerable members of First Nations, Inuit, and Métis communities. For one, critics feel that the government did not move quickly enough to determine which groups should be priority cases to receive the new vaccine when it becomes available in late 2009.

Another criticism is that the Public Health Agency of Canada (PHAC) was wrong not to separate statistics on the rates of H1N1 infection among Aboriginal people from those of the general population. This information would have allowed the government to target resources toward Aboriginal communities much more quickly.

As well, Kim Barker, a public health advisor to the Assembly of First Nations (AFN), has said the government appeared to be trying to silence Aboriginal leaders from speaking out about the deficiencies of its swine flu preparedness plan. As she notes, "because the solutions are costly, we are getting a lot of push-back from the federal government telling us not to talk about it" ("Federal policies fuel the spread of swine flu," www.cmaj.ca/earlyreleases/23july09_aboriginals.shtml).

Controversy over Hand Sanitizer

In the middle of June 2009 news broke that the government had delayed shipping crates of alcohol-based hand sanitizers to reserve communities out of fear that they would be abused by alcoholics in those communities. Not surprisingly, people were outraged by this news.

To Jessica Yee, an advocate for Aboriginal peoples, the government's apparent inaction on the swine flu crisis among First Nations people was appalling but not surprising. In her view, decisions such as the postponement of the distribution of alcohol-based hand sanitizers to Aboriginal communities was typical of federal policies that have totally failed to address the health-care crisis facing First Nations people.

Quote

"We've had a number of people come forward and some evidence where this could potentially put people at risk. For the vast majority of people it's not an issue but . . . that discussion was had with the best interest of our clients in mind and we have now distributed hand sanitizers."

— Anne-Marie Robinson, assistant deputy minister for the First Nations and Inuit Health branch of Health Canada ("Alcohol worries kept hand sanitizer from flu-hit reserves," Canada.com, June 24, 2009)

Yee argues that Canada's Aboriginal population has to cope with "Third World conditions" of medical care, while the rest of Canada's people enjoy the benefits of a health-care system that is second to none in the world. To support her claims, Yee cited a recent report from a Senate subcommittee investigating the inadequacies and inequities of First Nations health-care systems. She quotes it as follows: "Canada is generally perceived as one of the greatest countries in the world in which to live. It has a vast and diverse geography rich in natural resources, clean air, and a vast territory. When it comes to health, however, we unfortunately have serious disparities. Some Canadians live their lives in excellent health, with one of the highest life expectancies in the world; paradoxically others spend their life in poor health, with a life expectancy similar to some Third World countries. The unfortunate Canadians who suffer poor health throughout their lifetime are frequently less productive, adding to the burden on the health-care delivery system and social safety net. We cannot correct this inequity through the health-care delivery system itself, regardless of the expenditure we devote to it ("Canada's swine flu shame," www.guardian.co.uk/commentisfree/2009/jun/30/swine-flu-canada-first-nations/print).

Analysis

1. Do you agree with critics who claim that the federal government's plan to deal with the swine flu epidemic has been flawed when it comes to First Nations communities? Why or why not?
2. Why is it that a wealthy country like Canada has large groups of people who are unable to access basic health care?
3. Do you think that health-care agencies should promote the use of alternative medical therapies such as traditional Aboriginal healing practices or naturopathy in order to deal with the swine flu outbreak? Why or why not?

Solutions

One solution some Aboriginal people were exploring in the wake of the swine flu outbreak involved a return to traditional healing practices to fight the disease. Aboriginal healing techniques, as with other alternative medicine, focus on the well-being of a person as a whole—the physical, emotional, and spiritual. Traditional native healing focuses on strengthening the immune system so that it can better cope with viruses and bacteria.

Besha Blondin, a healer with the Dene people in the Northwest Territories, called on the medical community to consider joining forces with Aboriginal healers to deal with the virus. Blondin's ideas found support from both alternative medicine practitioners such as naturopaths and even Dr. Michael Gardom, the director of Ontario's Infectious Disease Prevention and Control program. Gardom pointed out that if alternative therapies are effective in fighting H1N1, then they could take some of the pressure off what he expected to be a seriously overloaded health-care system once the pandemic strikes.

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The “Spanish Lady”: The Flu Pandemic of 1918

Did you know . . .

Like the current swine flu virus, the Spanish flu’s victims of choice were previously healthy young people between the ages of 20 and 40.

“When your eyes begin to water and your nose turns blue, if your lips begin to quiver, then you’ve got the Spanish flu.”

— A common saying in Canada in 1918

As public health officials in Canada and around the world anxiously awaited the arrival of the H1N1 pandemic in the last months of 2009, one thought was uppermost in their minds: Would this outbreak bear any resemblance to the devastating 1918 influenza pandemic nicknamed “The Spanish Lady”? This virulent form of the disease made its first deadly appearance in Spain in May 1918, hence its nickname.

The Staggering Toll

Soldiers returning from the First World War brought the flu home to Canada and the United States later that year, with horrific consequences. By the time the outbreak had spent itself in late 1919, an estimated 21 to 50 million people worldwide had died from it, far more than the total military and civilian death toll for the war itself, which lasted from 1914 to 1918. In Canada, 50 000 people died, approximately the same number of Canadian soldiers killed in the fighting in Europe. In some small villages of rural Quebec and the Maritimes, entire populations were wiped out, and the communities became permanent ghost towns.

The Spanish flu struck quickly and unexpectedly. Sometimes people went to bed healthy and never woke up. Or they went to work in the morning feeling perfectly well and dropped dead before returning home at the end of the day. The symptoms were horrible, and death was agonizing, if mercifully quick. According to John M. Barry, author of

The Great Influenza: The Epic Story of the Deadliest Plague in History, “some of the more horrific symptoms included bleeding from your nose and mouth, and from your ears or even your eyes. In some cases, the floor would be covered in blood. It was an incredibly gruesome situation.”

The Spanish flu took its deadliest toll among the poorest Canadians living in small, overcrowded homes in working-class areas of cities like Toronto. Mabel Royle, who worked as a volunteer nurse during the epidemic in the west-end neighbourhood of York Township, recalled that people were dying in such numbers that grave diggers at Prospect Park cemetery could not inter them fast enough in the frozen earth that winter, and coffins were stacked like cordwood all over the burial grounds. In those days, there were no antibiotics available, and victims’ only hope for survival was the strength of their natural immune systems. People either recovered from or succumbed to the Spanish Lady’s deadly embrace, and all that caregivers could do was make their suffering a little less painful while it lasted.

Similarities with the 2009 H1N1 Outbreak

Hana Weingartl, a medical researcher with the Canadian Food Agency (CFA) tested the resistance of pigs to both the 1918 Spanish flu virus and a strain of swine flu isolated from a pig in 1930. She discovered that there was no significant difference between the effects of the two viruses on pigs. These results indicate that the 1918 human influenza virus and the one that caused swine flu in the same year were substantially the same thing.

Note

In 1918, the Spanish flu took about a year to make its way around the globe. Air travel did not exist at that time. Today, H1N1 can board a jet plane anywhere in the world along with its unsuspecting passenger host and arrive at any other destination within hours, or days at the most.

There are other disturbing similarities between the two variants of influenza. Both strike the poor far more than the rich, since poor people live in overcrowded conditions where the virus can spread easily. In 1918 there were many poor people living in the world; in 2009 there are billions more.

Reasons for Optimism

According to medical researchers at the Atlanta-based U.S. Centers for Disease Control and Prevention (CDC), the

current swine flu virus is nowhere near as lethal as its 1918 cousin because it lacks the genes that made the Spanish flu so deadly to its human victims.

In addition, the availability of antiviral medications and a possible vaccine, to say nothing of vastly improved and far more accessible medical care to the general population, mean that a potential H1N1 pandemic will kill far fewer victims than the Spanish Lady did in her worldwide tour of death in 1918.

Analysis

1. How important is it for medical researchers to discover a link between the current H1N1 virus and the one that caused the Spanish flu in 1918? Why?
2. Do you think that a worldwide swine flu pandemic in 2009 could be as deadly as the Spanish Lady of 1918? Why or why not?

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Activity: You Decide

The Issue

A number of observers are concerned that there may not be enough swine flu vaccine for every Canadian once it becomes available in the fall of 2009.

Your Task

With a partner, or in a small group, develop a list of criteria to determine which groups of Canadians should be considered top priority to receive the swine flu vaccine first.

Before you generate your list, you may want to view the *News in Review* video again and consider the following:

- Young people between the ages of 20 and 40 seem to be at higher risk than others of contracting H1N1.
- Pregnant women are also considered to be high risk.
- The skills and knowledge of health-care providers and professionals will be needed in the event of a pandemic.
- Providers of essential services (e.g., police, firefighters, public transit workers) will be required to continue working in the event of a pandemic.
- It is expected that the incidence of swine flu will be higher in low-income socio-economic groups and among First Nations people.
- Transmission rates will be higher wherever humans are in close contact with one another (e.g., schools).

Once you have created your list of criteria, you will be comparing your work with two other pairs or groups. You will have to convince the others that your criteria are correct, so make sure you have strong reasons for your rankings.

Our Criteria
