

Lesson Plans for

Outbreak: Anatomy of a plague
(NFB and PMA Productions, 2010)

and

Outbreak
(PMA Productions and 6843212 Canada Inc., 2010)

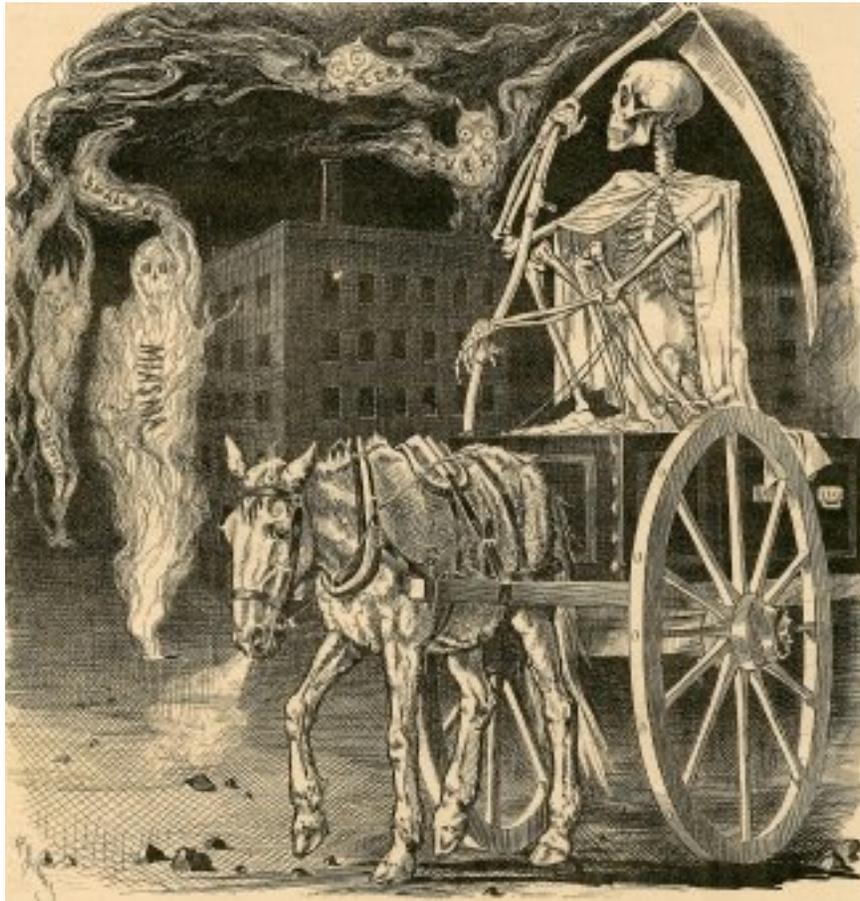


Image credit: Henri Julien, "Montreal's Night-Mayor on his Ghostly Rounds (Dedicated to the Board of Health)". See the image at the McCord Museum Collections: <http://www.mccord-museum.qc.ca/en/collection/artifacts/M992X.5.82>.

Produced by:

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Background for Teachers

One hundred and twenty-five years ago, on April 1, 1885, smallpox claimed its first victim in Montreal. The city played its own grim role in the history of infectious diseases, as the site of the last urban epidemic of smallpox in the modern world. By the time the 1885 plague had run its course, the deadly virus had claimed the lives of over three thousand Montrealers, mostly children. A century and a quarter later, what have we learned from the tragedy? That's the question asked by the movie *Outbreak: Anatomy of a plague* (NFB, 2010), and the game *Outbreak* (PMA Productions and 6843212 Canada Inc., 2010).

These Lesson Plans have been designed to facilitate your use of the documentary film *Outbreak: Anatomy of a plague*, and the game *Outbreak*, in the secondary school History classroom. In the pages that follow, you will find:

- A **History of the Outbreak**, to provide context for the movie and the game (page 3)
- An **Animated History** (page 4)
- A **Lesson Plan** to support your use of the movie and game over three class periods (page 6)
- A **Lesson Plan** to support your use of the game alone over two class periods (page 8)
- **Student Activity Sheets**, to help students engage important questions as they watch the film (page 10)
- **Student Activity Sheet – Answers**, to facilitate teachers' and students' reviews of the Student Activity Sheets for the film (page 12)
- **Student Activity Sheets**, to help students engage important questions as they play the game (page 14)
- **Student Activity Sheet – Answers**, to facilitate teachers' and students' reviews of the Student Activity Sheets for the game (page 15)

The DVD is available for sale on line at www.nfb.ca/store or by calling the NFB's toll-free customer service line at: 1-800-267-7710. The game may be played at www.outbreak1885.com. We welcome your feedback at kevin.b.kee@gmail.com.

A History of the Outbreak¹

On February 25th, 1885, George Longley, a train conductor, arrives in Montreal, carrying in his body the deadly smallpox virus. Doctor Thomas Rodger examines him, confirms that Longley has smallpox, and admits him to Montreal General Hospital. Later, he is moved to Hotel Dieu, a Roman Catholic hospital. Though Longley recovers and is released, Pelagie Robichaud, a worker in the hospital laundry, catches the virus on March 23rd, and dies on April 1st. Her sister, Marie, also contracts the virus and dies ten days later on April 11th. The smallpox virus is a hemorrhagic strain, called the “Black pox”, and is the worst kind possible. The outbreak has begun.

The city begins distributing vaccinations and the newspapers run articles warning the citizens of the outbreak, but in May, Dr. William Bessey orders that the public immunization program stop, due to side-effects in many of those who have received vaccinations. People can still get the vaccine from their personal doctors, but many doctors counsel against it. Doctor Alexander Milton Ross, a proponent of hydrotherapy (water cures) and a strong believer in clean living, is an especially loud critic of vaccination.

Montreal is typically dirty in the spring when the snow melts, revealing piles of garbage and animal waste; the increasing number of smallpox sufferers makes the situation worse. Low sanitation levels do not necessarily contribute to the smallpox outbreak, but the sight and stench of garbage causes the public to protest. After a summer of outdoor events and large crowds, the smallpox outbreak reaches a fever pitch in August, and on September 14th, it is recognized as an epidemic.

In October, 1,284 people die from smallpox, and the end is nowhere in sight. At the beginning of November, roughly 5,000 cases of smallpox are reported by the Citizens’ Committee. Immunizations are now being carried out in a massive sweep across the city, and those who refuse are warned that they could face fines. Sanitation companies work at full capacity for months on end, cleaning up dead animals and refuse, and burn it in large incinerators. City leaders are criticized for their use of the vaccine, and isolation of the sick, which leads to riots in the city streets by terrified and outraged citizens. By mid-December, the public is offered two options: accept vaccination or pay a fine. Thankfully, the spread of the virus slows, and on May 21st of 1886, the last case of smallpox is recorded.

Between George Longley’s arrival on February 25th, 1885, and May of 1886, over 9,600 cases of smallpox are recorded in the city. The death toll is 3,234 inhabitants, most of whom are children. It is the most devastating epidemic in the history of Montreal.

¹ This summary is drawn from Michael Bliss’s *Plague: A Story of Smallpox in Montreal* (HarperCollins, 1991).

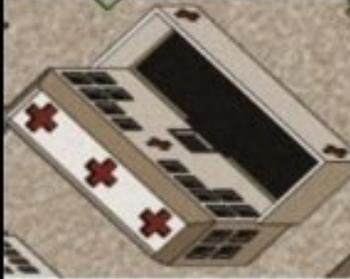
MONTREAL, 1885

SMALLPOX OUTBREAK

Based on "Plague" by Michael Bliss (HarperCollins, 1999)



Though Longley recovers and is released, Pelagie Robichaud, a worker in the hospital laundry, catches the virus on March 23rd, and dies on April 1st. Her sister, Marie, also contracts the virus and dies ten days later on April 11th. The smallpox virus is a haemorrhagic strain, called the "Black pox" and is the worst kind possible. The outbreak has begun.



Alexander Milton Ross dislikes the vaccine



People can still get the vaccine from their personal doctors, but many speak out again. Milton Ross, a strong believer in clean living and vehemently against vaccines.

Low sanitation levels do not necessarily contribute to the smallpox outbreak, but the stench and piles of garbage causes the public to protest the city's cleaning policy. After a summer of outdoor events and large crowds, the smallpox outbreak reaches a fever pitch in August, and by September 14th, the outbreak is recognized as an epidemic.



On February 25th, 1885, George Longley, a train conductor, arrives in Montreal, carrying in his body the deadly smallpox virus. Doctor Thomas Rodger examines him, confirms that Longley has smallpox, and has him admitted temporarily to Montreal General Hospital. Later, he is moved to Hotel Dieu, a Catholic hospital.



Conductor George Longley arrives sick from Chicago but survives

The city begins distributing vaccinations and the newspapers run articles warning the citizens of the outbreak, but in May, Dr. William Bessey orders that the public immunizations should stop due to side-effects in many of those who received shots.



Doctor William Bessey is in charge of the city's health

Though Montreal is often quite dirty in the spring due to melting snow and ice that uncovered garbage and rotting vegetation, the increasing number of smallpox sufferers further lowers the sanitation level of the city.



In October, 1,284 people die from smallpox, and the end is nowhere in sight. At the beginning of November, roughly 5,000 cases of smallpox are reported by the Citizens' Committee. Immunizations are now being carried out in a massive seep across the city, with any who refuse being noted and warned that they could face fines. Sanitation companies work at full capacity for months on end, cleaning up dead animals and refuse, burning the remains and garbage in large incinerators.

City leaders are criticized for their use of the vaccine and isolation of the sick, which leads to riots and protests in the city streets be terrified and outraged citizens. By mid-December, the public is offered two options: accept vaccination or pay a fine. Thankfully, the spread of the virus slows, and in May 21st of 1886, the last case of smallpox is recorded.

Madame Chaput believes that isolation is the best way to prevent the spread of infection



Between George Longley's arrival on February 25th, 1885, and May of 1886, over 9,600 cases of smallpox are recorded in Montreal. The death toll is 3,234 inhabitants, most of whom were children. The most devastating epidemic in the history of Montreal was sparked by a single train conductor, but was made possible by unclean streets, ignorance, apathy, and turmoil.



Danger!
Quarantine!
Vaccinate!



Reference:
Bliss, Michael. Plague: A Story Of Smallpox In Montreal. Toronto: HarperCollins Publishers, Inc, 1991.
Produced by: Simulating History Lab, Brock University, 2010.
Authors: Adam Christensen, Spencer Roberts, and Tamer Thabet

Lesson Plan:
Outbreak: Anatomy of a Plague (Movie)
and
Outbreak (Game)

Grade Level: Secondary (Grades 9-12)

Subject: History

Time Period: 1885 to present

Time Allowance: 180 minutes

Movie duration: 1 hour 26 minutes

Overview and Instructions

This lesson consists of two parts to be spread over approximately three days. Students will begin by watching *Outbreak: Anatomy of a Plague*, a documentary film about the 1885 smallpox epidemic in Montreal. They will also be given a “Student Activity Sheet” (page 10) to complete as they watch the film.

Students will then play the game *Outbreak*, in which they must use vaccination, isolation, and sanitation to prevent the spread of smallpox in Montreal during the 1885 outbreak. Students should be given “A History of the Outbreak” (page 3) and/or the “Animated History” (pages 4-5), to familiarize themselves with the history of the epidemic, and then allowed at least 20 minutes to play the game. At the end of the game play, students should fill out the “Student Activity Sheet” for the game (page 14). Following the game play, use the following discussion questions to help students engage with the content and experience.

Discussion Questions

1. In 1888, the three methods of containing the smallpox virus were vaccination, isolation, and sanitation. How effective were these methods in the game? Why?
2. What is the purpose of picking up the garbage in the city?
3. Newspapers often influence public opinion. Did the newspaper headlines help or hinder you as you attempted to contain the outbreak? Were newspapers a help or hindrance in 1885?
4. Did the advisors – Dr. William Bessey, Alexander Milton Ross and Madame Chaput – help or hinder you as you attempted to contain the outbreak? Were the advisors a help or hindrance in 1885?
5. What is the significance of the inevitable overwhelming of the city, by smallpox, when playing the game?
6. Of all the factors contributing to the 1885 outbreak, which was most significant and why?
7. What lessons can be learned from the 1885 outbreak that might be applied to pandemics today?

Extension Questions and Activities

1. Divide the class into groups. Ask each group to design their own game about the 1885 outbreak, and create a poster to market their game.
2. Divide the class into groups. Ask each group to create a poster that will advise members of the public on how to respond when an outbreak occurs.
3. Research an epidemic that occurred in Canada between 1900 and 2010. Give special attention to the methods that were used to contain the epidemic, the response of the media, and the various special interest groups that tried to influence the authorities' response to the outbreak. Prepare a one-page summary of your research, making sure to answer the questions below.
 - a. What was the virus or disease that you chose?
 - b. Where did it occur?
 - c. When did it occur?
 - d. Who was in charge of containing the outbreak? Which members or organizations in the media most influenced public opinion? Which special interest groups influenced the authorities' response to the outbreak?
 - e. How was the outbreak that you studied similar to Montreal's 1885 epidemic? How was it different?
 - f. What lessons from the Montreal outbreak do you think were considered by public health officials in the outbreak that you studied?
 - g. What role did the media play in the more recent outbreak, and how did it compare to the 1885 newspapers?
 - h. Were authorities better prepared to handle the outbreak that you chose than they were in 1885? Would you consider the authorities' actions to have been successful?
 - i. What changes have been made in how outbreaks are contained?

Lesson Plan: ***Outbreak: The Game***

Grade Level: Secondary (Grades 9-12)

Subject: History

Time Period: 1885 to present

Time Allowance: 120 minutes

Overview and Instructions

Students will play the game *Outbreak*, in which they must use vaccination, isolation, and sanitation to prevent the spread of smallpox in Montreal during the 1885 outbreak. Students should read the “History of the Outbreak”, (page 3) and the “Animated History” (pages 4-5), to familiarize themselves with the events of the 1885 epidemic, and then allowed at least 20 minutes to play the *Outbreak* game. At the end of the game play, students should fill out the “Student Activity Sheet” for the game (page 14). Following the game play, use the following discussion questions to help students engage with the content and experience.

Discussion Questions

1. In 1888, the three methods of containing the smallpox virus were vaccination, isolation, and sanitation. How effective were these methods in the game? Why?
2. What is the purpose of picking up the garbage in the city?
3. Newspapers often influence public opinion. Did the newspaper headlines help or hinder you as you attempted to contain the outbreak? Were newspapers a help or hindrance in 1885?
4. Did the advisors – Dr. William Bessey, Alexander Milton Ross and Madame Chaput – help or hinder you as you attempted to contain the outbreak? Were the advisors a help or hindrance in 1885?
5. What is the significance of the inevitable overwhelming of the city, by smallpox, when playing the game?
6. Of all the factors contributing to the 1885 outbreak, which was most significant and why?
7. What lessons can be learned from the 1885 outbreak that might be applied to pandemics today?

Extension Questions and Activities

1. Divide the class into groups. Ask each group to design their own game about the 1885 outbreak, and create a poster to market their game.
2. Divide the class into groups. Ask each group to create a poster that will advise members of the public on how to respond when an outbreak occurs.

3. Research an epidemic that occurred in Canada between 1900 and 2010. Give special attention to the methods that were used to contain the epidemic, the response of the media, and the various special interest groups that tried to influence the authorities' response to the outbreak. Prepare a one-page summary of your research, making sure to answer the questions below.
 - a. What was the virus or disease that you chose?
 - b. Where did it occur?
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 - d. Who was in charge of containing the outbreak? Which members or organizations in the media most influenced public opinion? Which special interest groups influenced the authorities' response to the outbreak?
 - e. How was the outbreak that you studied similar to Montreal's 1885 epidemic? How was it different?
 - f. What lessons from the Montreal outbreak do you think were considered by public health officials in the outbreak that you studied?
 - g. What role did the media play in the more recent outbreak, and how did it compare to the 1885 newspapers?
 - h. Were authorities better prepared to handle the outbreak that you chose than they were in 1885? Would you consider the authorities' actions to have been successful?
 - i. What changes have been made in how outbreaks are contained?

Student Activity Sheet
Outbreak: Anatomy of a plague (film)

1. How did smallpox enter Montreal?

2. Which hospital took in the first victim, and who ran the hospital?

3. How did the infection spread from a single case to the rest of the hospital and beyond?

4. Why was Montreal called a “City of Wealth and Death”?

5. Why was the smallpox hospital closed at the beginning of the epidemic?

6. Why is smallpox difficult to detect or diagnose in its early stages? Why would a modern doctor potentially have difficulty diagnosing the infection?

7. Why did the press have difficulty learning of news of the outbreak?

8. Why does smallpox still exist today?

9. What is the modern strategy to deal with a disease like smallpox?

10. What is a “miasma”?

11. What caused people to refuse the vaccine? Which group refused more than the others?

12. Why was Alexander Milton Ross a questionable authority figure?

13. Why are some groups blamed as the cause of epidemics? Which groups were blamed during the 1885 smallpox and 2006 SARS epidemics?

14. Which classes were able to leave Montreal in 1885? Which classes had to stay?

15. Who were the Grey Nuns ordered not to give aid to?

16. What were the conditions of the smallpox hospital?

17. How was Montreal affected economically during the epidemic?

18. What was the public response to mandatory vaccination?

19. What was the “Gagnon Affair”?

Student Activity Sheet (Answers)
Outbreak: Anatomy of a plague (film)

- 1. How did smallpox enter Montreal?**
Through George Longley, a train conductor coming from Detroit.
- 2. Which hospital took in the first victim, and who was in charge of care?**
Hotel Dieu took in the first victim. It was run by the Roman Catholic Church.
- 3. How did the infection spread from a single case to the rest of the hospital and beyond?**
Pelagie Robichaud, an Acadian girl working in the laundry of the hospital, caught smallpox and spread it to her sister and others outside Hotel Dieu.
- 4. Why was Montreal called a “City of Wealth and Death”?**
Montreal featured wealthy homes on the mountainside, above a very poor area. The poorer classes were packed into slums and were generally neglected.
- 5. Why was the smallpox hospital closed at the beginning of the epidemic?**
There had not been a case of smallpox in Montreal since 1880, 5 years before the 1885 epidemic.
- 6. Why is smallpox difficult to detect or diagnose in its early stages? Why would a modern doctor potentially have difficulty diagnosing the infection?**
Smallpox looks very similar to chicken pox. Few doctors today would have seen a case of smallpox.
- 7. Why did the press have difficulty learning of news of the outbreak?**
The Montreal City Council suppressed information about the epidemic as long as it could.
- 8. Why has smallpox not been eradicated?**
Governments have maintained stockpiles for research (and possibly military) purposes.
- 9. What is the modern strategy to deal with a disease like smallpox?**
Search and contain.
- 10. What is a “miasma”?**
In the 19th century, people believed that illnesses such as smallpox could be spread through “bad air” which they called miasma.

11. For what reasons did people refuse the vaccine? Which group was the most resistant to receiving the vaccine?

Reasons included doubt that the vaccine worked, fear of side effects (a bad batch of vaccine had resulted in several deaths), and discomfort with the fact that the vaccine had come from cowpox. The French-speaking population resisted the vaccine the most.

12. Why was Alexander Milton Ross a questionable authority figure?

He prescribed questionable treatments such as hydrotherapy, which was an unproven treatment, and opposed many medical advances of the period.

13. Why are some groups blamed as the cause of epidemics? Which groups were blamed during the 1885 smallpox and 2006 SARS epidemics?

Newcomers and outsiders are often considered threats during epidemics. The French were targeted during the 1885 epidemic, while the Asian community was targeted during the SARS outbreak.

14. Which classes were able to leave Montreal in 1885? Which classes had to stay?

The wealthier classes could afford to leave Montreal, while the lower classes had to remain.

15. Who were the Grey Nuns ordered not to give aid to?

Families where the father was an alcoholic.

16. What were the conditions of the smallpox hospital?

The conditions were poor. The hospital was cold and dirty, and the staff was cruel, often ignoring patients with the worst cases.

17. How was Montreal affected economically during the epidemic?

A boycott of goods coming from Montreal resulted in lost jobs and closed businesses, because factories could not sell the stock they produced.

18. What was the public response to mandatory vaccination?

The people began to riot in response to mandatory vaccination.

19. What was the “Gagnon Affair”?

A worker named Gagnon and his family came into conflict with the police and health officials when they refused to let their children be taken away to isolation. Shots were fired during the scuffle.

Student Activity Sheet
Outbreak (Game)

After playing *Outbreak*, fill in this sheet with your answers.

1. Which of the three containment methods was the most difficult to use?
2. Which method did you find most successful or effective?
3. Who were the three advisors?
4. What were their main concerns?
5. What kind of information did the newspapers provide?
6. Was the information from the newspaper useful?
7. What aspect of the game did you find most frustrating and why?
8. Over the time you played the game, did you develop a strategy that helped you achieve a higher score?

Student Activity Sheet (Answers)
Outbreak (Game)

After playing *Outbreak*, fill in this sheet with your responses to the game.

1. Which of the three containment methods was the most difficult to use?
2. Which method did you find most successful or effective?
3. Who were the three advisors?
 - a. Alexander Milton Ross
 - b. Doctor William Bessey
 - c. Madame Chaput
4. What were their main concerns?
 - a. Ross: Sanitation
 - b. Bessey: Vaccination
 - c. Chaput: Isolation
5. What kind of information did the newspapers provide?
 - a. Public opinion
 - b. Smallpox presence
 - c. Sanitation levels
 - d. Positive and negative responses
6. Was the information from the newspaper useful?
7. What aspect of the game did you find most frustrating and why?
8. Over the time you played the game, did you develop a strategy that helped you achieve a higher score?