

# Multi-Doc Summarization COVID-19

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# Overview

1. Extract sentences that contain the theme.
2. Remove redundant sentences.
3. Organize sentences by location.
4. Order sentences by time.
5. Include previous and/or subsequent sentences from the original article that may not contain a time or location, but have the same theme. Will help make the summary more coherent and complete.

# Include Previous/Subsequent Sentences

1. Check previous sentence if it is (1) about the given theme by checking the sentence for the CatE phrases related to the theme, and (2) isn't redundant\*\*.
2. If the previous sentence contains the theme and isn't redundant, check the next previous sentence and keep going until the sentences become irrelevant.
3. Same process for subsequent sentences.
4. Add the new chunk of sentences into the summary.

\*\* A sentence is redundant if it has a Word Mover's Distance less than 1.5 with any other sentence in the chunk.

# Example

- **Theme:** symptom
- **Location:** China
- **Time:** 2020-02-03
- **Original sentence:** “Dr. Barbara Yaffe says most cases under investigation meet the case definition, which says that the person would have been in Hubei province within the past 14 days and have a fever or a cough.”
- **Previous sentence:** “Yaffe said the majority of cases under investigation meet the case definition, which says that the person would have been in Hubei province within the past 14 days and have a fever or cough.” **Do not include, is redundant with original sentence.**
- **Next previous sentence:** “Officials say the result of 26 cases are still pending. **Do not include, does not include theme ‘symptom’.**
- **Subsequent sentence:** She said, however, there are a small number who came from other parts of China and have symptoms.” **Include, isn’t redundant and includes theme.**
- **Next subsequent sentence:** “The physician taking care of the patient felt there was concern and wanted the [coronavirus] testing done,” she said. **Do not include, does not include theme.**

**New chunk to add to summary:** “Dr. Barbara Yaffe says most cases under investigation meet the case definition, which says that the person would have been in Hubei province within the past 14 days and have a fever or a cough. She said, however, there are a small number who came from other parts of China and have symptoms.”

# Initial Summary of 'Symptom'

## CHINA:

2020-01-22 00:00:00 " Health officials stress precautions for travellers to prevent infection while in China, such as staying away from animal markets, washing hands, observing cough hygiene, not coming into contact with sick people and telling health-care providers about their travel if flu-like symptoms occur.

2020-02-03 00:00:00 Dr. Barbara Yaffe says most cases under investigation meet the case definition, which says that the person would have been in Hubei province within the past 14 days and have a fever or a cough.

## CANADA:

2020-04-06 00:00:00 " A government of New Brunswick infographic lists only three symptoms of COVID-19: cough, difficulty breathing and fever.

2020-04-21 00:00:00 Alberta, on the other hand, makes testing available to anyone showing symptoms of the virus – cough, fever, shortness of breath, runny noses and sore throats.

## ITALY:

2020-02-26 00:00:00 The health ministry had determined that people with fever and flu symptoms returning from Italy and six other countries should be considered suspected cases.

## BRAZIL:

2020-02-26 00:00:00 According to Brazil's health ministry, the man began to show symptoms compatible with the illness, such as a dry cough, throat pain and flu symptoms.

## BAHRAIN:

2020-04-20 00:00:00 A South Korean businessman returned then from a trip to Bahrain and quickly developed a cough and fever.

## UNITED STATES:

2020-03-13 00:00:00 0:51 \"We didn't want to stay in New York [and] be unable to come back and maybe get sick.\" Still, just days after returning from the U.S. on March 13, Levesque began to feel unwell, having developed a mild fever, as well as nausea, a cough and muscle pain.

## GERMANY:

2020-02-04 00:00:00 The woman had \"mild, unspecific symptoms\" while in Germany and took medication to reduce a fever, said Marieke Degen, a spokesperson for Germany's public health agency, the Robert Koch Institute (RKI), in an email to CBC News.

# 'Symptom' Summary after Including Surrounding Sentences

1 CHINA:  
2 2020-01-22 00:00:00 " Health officials stress precautions for travellers to prevent infection while in China, such as staying away from animal markets, washing hands, observing cough hygiene, not coming into contact with sick people and telling health-care providers about their travel if flu-like symptoms occur.  
3 2020-02-03 00:00:00 Dr. Barbara Yaffe says most cases under investigation meet the case definition, which says that the person would have been in Hubei province within the past 14 days and have a fever or a cough.  
4 2020-02-03 00:00:00 "The physician taking care of the patient felt there was concern and wanted the [coronavirus] testing done,\" she said.  
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6 CANADA:  
7 2020-04-06 00:00:00 " A government of New Brunswick infographic lists only three symptoms of COVID-19: cough, difficulty breathing and fever.  
8 2020-04-06 00:00:00 What finally prompted her to call 811 was a symptom that didn't appear anywhere in the government of New Brunswick information.  
9 2020-04-06 00:00:00 \"I could taste and smell nothing,\" she said.  
10 2020-04-21 00:00:00 Alberta, on the other hand, makes testing available to anyone showing symptoms of the virus – cough, fever, shortness of breath, runny noses and sore throats.  
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12 ITALY:  
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