

Abstract

A Case Study of a COVID-19 Outbreaks in ** County, Republic of Korea

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A total of eleven coronavirus infection-19 (COVID-19) cases were reported on April 5th, 2020 after the first confirmed case was reported in ** County on March 24th, 2020. ** County is South Chung-Cheong Province (Chungcheongnam-do). The Chungcheongnam-do rapid response team and the ** County Health Center conducted an epidemiological survey to identify the outbreak, determine the extent of the outbreak, prevent transmission, and prevent further outbreaks.

This report examined the epidemiological investigation process of the eleven confirmed case by using the data of the ** County Health Center and the on-site epidemiological investigation report of the rapid response team-. In addition, this report calculated and analyzed the general characteristics.

The report found that nine out of the eleven confirmed cases occurred at a church gathering. Furthermore, an epidemiological survey confirmed that some of the church's congregation wore masks with inadequate protection and many worshippers did not observe social distancing. A complete survey was conducted on April 1st for the individuals who attended the last worship which is on March 22nd to confirm cases and then conducted total complete survey on April 3rd for the rest in the church, but there were no additional confirmed cases. Out of the eleven cases, one was an imported case and one was a confirmed case from a community with no epidemiological connection.

The report found the following general characteristics of the eleven confirmed cases. There were five males (45.5%) and six females (55.5%). The average age was 49.8 (21-78) with a median age of 48. Ten cases were domestic (90.9%), and one case was an imported case from Britain (9.1%). In terms of initial symptoms, six cases (25.0 %) had fever or heat sensation, five had cough or sputum (20.8 %), and four patients (16.7 %) had chills. The initial symptoms of the confirmed cases were mostly minor and non-specific and were not significantly much different from known COVID-19 cases. A total of 121 people were classified according to the guidelines as contact persons of the eleven confirmed cases. The contact cases were managed by ** County Health Center. This report concluded that locations that foster large gatherings, such as those found in religious facilities, must be managed by establishing effective response strategies and by sharing epidemiological and clinical analysis data on COVID-19.

Keywords: Coronavirus Disease-19 (COVID-19), Church, Outbreaks, Epidemiological monitoring

Table 1. Demographic characteristics of eleven COVID-19 confirmed cases in ** County, Republic of Korea (n=11)

Characteristics		n	%
Sex			
	Male	5	45.5
	Female	6	55.5
Age			
	20~29	1	9.1
	30~39	2	18.2
	40~49	3	27.3
	50~59	2	18.2
	60~69	1	9.1
	≥70	2	18.2
	Mean±SD	49.8±16.5 (Median 48.0)	
Nationality			
	Korean	10	90.9
	The United Kingdom	1	9.1
Sings and Symptoms at on onset (can be duplicated)			
Respiratory Symptom			
	Fever, Heat sensation	6	25.0
	Sore Throat	2	8.3
	Cough or Sputum	5	20.8
	Runny nose	1	4.1
Other symptoms			
	Muscle ache	3	12.5
	Chills	4	16.7
	vomiting	2	8.3
	Headache	1	4.1

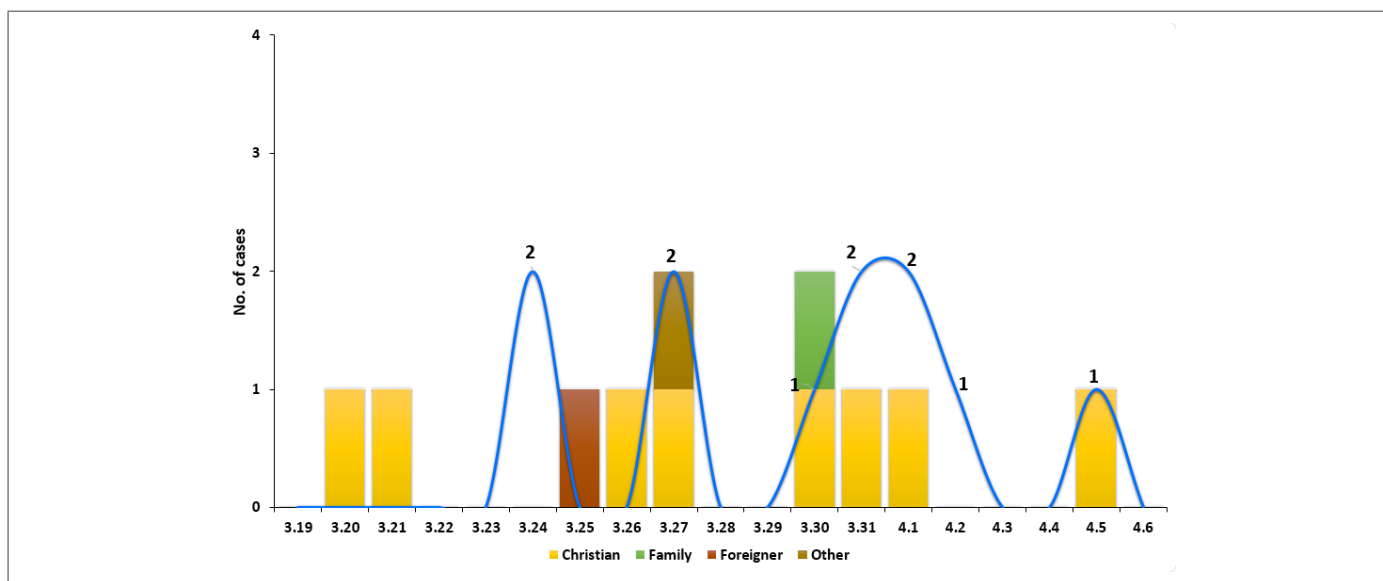


Figure 1. The epidemiological curves of the Signs and symptoms of the eleven COVID-19 cases at the onset date in ** County, Republic of Korea

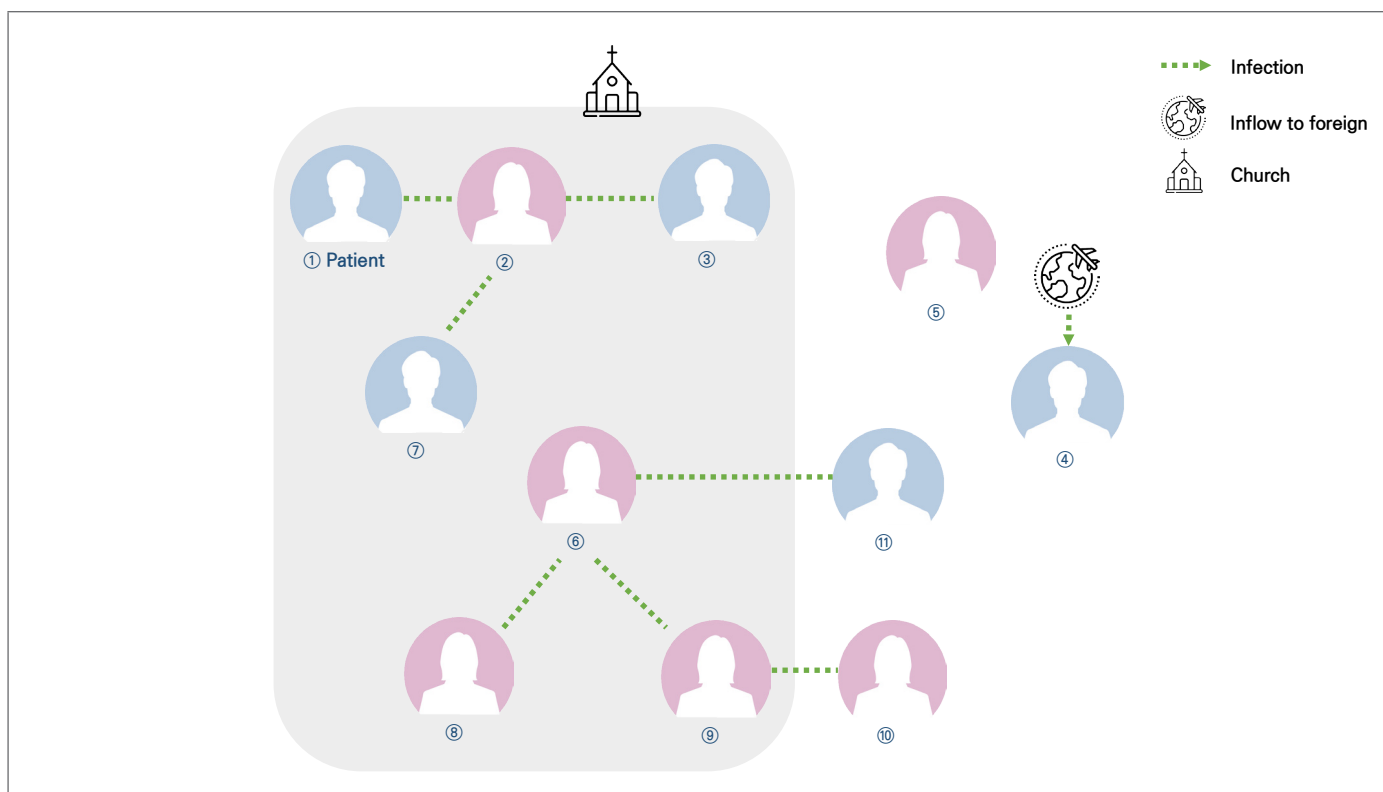


Figure 2. Relationship diagram of the first Coronavirus Disease-19 (COVID-19) cases in ** County, Republic of Korea