

every locale, personal protective and preventative measures can be used [11], including voluntary home isolation if a person feels ill.

Patient Care and Quarantine

Proper care and quarantine of an infected individual is critical to their well-being and the well-being of those around them. This includes:

- Ensuring that medical professionals know the signs and symptoms to ensure that infected patients do not expose them or others (and can be quarantined)
- Ensuring that caregivers and medical professionals use the right protective measures (e.g., protective equipment like masks) to prevent their own exposure
- Providing care for the symptoms of the viral infection while monitoring for or managing secondary infections or other pre-existing conditions

In this activity, you'll leverage your understanding of Concept 1: Preventing Transmission, as well as the ideas of isolation, patient care, and quarantine to identify the source of and develop a solution for a new virus outbreak.

Activity 5: Finding the Source of an Outbreak

Community healthcare workers are often tasked with investigating the source of transmission. In this scenario, you will play the role of a local Health Department Investigator. A patient, named Kathy, recently checked into the hospital with a confirmed case of a new, epidemic disease. You need to attempt to find the source of the virus and determine who else may be impacted.

Using the Scenario Information on Page 14 and the community map on Page 5 of the Student Worksheet, investigate and chart the locations and people Kathy interacted with to **answer the questions on Page 4 of the Student Worksheet.**

GUIDANCE: Write each person's name on the map for each location they visited. Trace the infection from Kathy back through each location to identify potential sources. Consider the activities of each individual and their current health status to identify who may have been the original source. Then identify each person she may have interacted with, and consider whether or not they could have been infected or if they should be monitored for possible infection.

Answer questions on Page 4 of the Student Worksheet.



Scenario Information

The below table describes each of the locations all individuals in the scenario have visited over the past several days. Additionally, the health status of each individual is listed. Only a single confirmed case exists, though others have expressed that they “feel unwell”.

Individual	Health Status	Behaviors
Kathy	Confirmed Case	Lives in Kathy's House Works at Store Diagnosed at Hospital
Jill	Healthy	Recently traveled domestically (Airport) Stays inside all day at Apartment
Mary	Healthy	Lives in Nearby Town
Kyler	Feels Unwell	Lives in Kyler's House Recently traveled from overseas (Airport) Attended Concert
Sam	Has Lung Disease	Lives in Sam's House Works at Office
Scott	Healthy	Lives in Apartment Building Works as contractor in Lisa's House
Jack	Feels Unwell	Lives in Jack's House Works at Hospital
John	Has Heart Disease	Retired, stays at Apartment all day
Jane	Healthy	Retired, stays at Apartment all day Lives with John
Pete	Healthy	Lives in Pete's House Works at Office
Lisa	Healthy	Works at Office Lives in Lisa's House
Fran	Feels Unwell	Works at Store Lives in Fran's House
Jeff	Feels Unwell	Attended Concert Shops at Store Lives in Jeff & Megan's House
Megan	Healthy	Attended Concert Lives in Jeff & Megan's House
Anna	Feels Unwell	Attended Concert Lives in Nearby Town
Tammy	Healthy	Works at Hospital Lives in Tammy's House
Ted	Healthy	Works at Hospital Lives in Ted's House

Activity 6: Developing an Outbreak Control Solution

Based on your investigation above, you now need to develop a solution for controlling the outbreak. Assume that the population has a high susceptibility (effectively no immunity), and that this new virus has a R_0 of about 2 – 4.

Answer questions on Page 6 of the Student Worksheet.



Concept 2: Protecting Communities

Activity 5: Finding the Source of an Outbreak

GUIDANCE: The table on Page 14 of the Lab Manual provides the locations all individuals in the scenario have visited over the past several days. Additionally, the health status of individuals is listed. Only a single confirmed case exists though others have expressed that they “feel unwell”.

Write each person’s name on the map for each location they visited. Trace the infection from Kathy back through each location to identify potential sources. Consider the activities of each individual and their current health status to identify who may have been the original source. Then identify each person she may have interacted with and consider whether or not they could have been infected or if they should be monitored for possible infection.

Answer the following questions based on your investigation of the scenario:

Who could’ve transmitted the virus to Kathy?

Who is the likely initial source of the virus? Why?

Who else was potentially exposed?

Could the virus have left the community? If so, to where?



Community Map

Office

Hospital

Apartment Building

Pete's House

Ted's House

Store

Airport

Kyler's Home

Jeff & Megan's House

Kathy's House

Lisa's House

Concert

Nearby Town

Jack's House

Fran's House

Sam's House

Tammy's House