Virus Game

a. Set-up steps for players

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1	Use a charged mobile device with a camera and:
	  ▪ Android devices: Chrome browser.
	  ▪ Apple devices [iOS 11 or later]: Safari browser.
	  ▪ Fire tablets: Silk browser.

2	Connect to wi-fi, go to **psims.games** and Select **Join a Game** OR, skip this step if the game is already loaded on the device (at a webpage with a gray background).
3	Whenever prompted, a player should allow the website (psims.games) to access and use the device's camera. This is necessary for scanning QR codes. Enter the **Game Code** (created by the host). Enter a **Display Name** the player will remember, and Select **Join.** Note: If "Rejoin Game" appears at the top of the page, select the blue *Join game* link.
4	At the **Enter Game** prompt, select **Continue**… … then, **STOP.**

Game Code:

Notes:

Players will see these screens
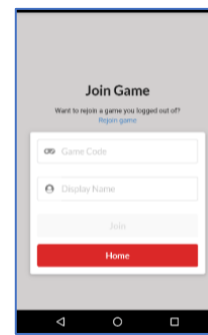
Step 3   **Step 4**
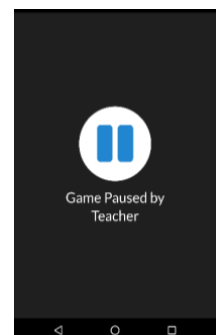
## b. Introducing the game to players

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1	Explain how the game will work:
	
	Players will toggle between two tabs:
	  ▪ **Be Met** (with a QR code and avatar displayed)
	  ▪ **Meet** (with a camera displayed)
	
	Players will meet each other by scanning the QR codes on each other's devices.
	
	The **Be Met** screen changes with a player's status:
	  ▪ **Healthy**: White background
	  ▪ **Sick**: Red background, audible alert

2	Tell players: **Their objective is to meet as many people as possible without getting sick.**
3	Explain that that's it! It's normal to be confused about what's happening in the game. In fact, part of the game is to come up with questions to ask. Save them for the discussion after this first round.

Players will see these screens
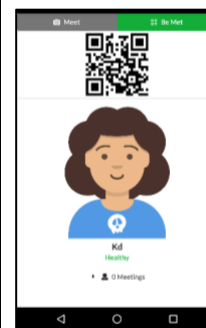
Be Met   **Meet**
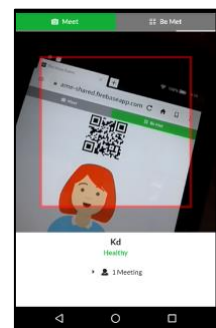
Note: If players log out at any point (by refreshing or navigating away from the page), they can return to the webpage and rejoin the game. The game host will be alerted to any

		Rejoin Request in order to accept or reject the players' requests.

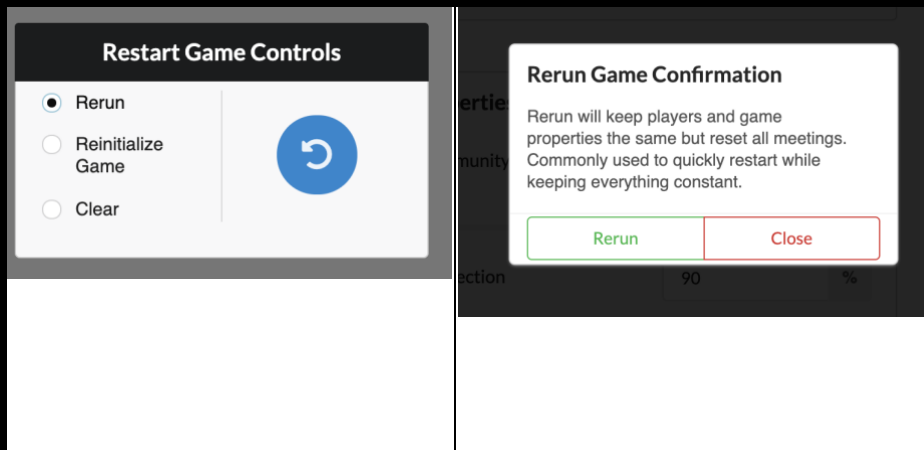| c. Game parameters	
Patient Zero	The player who starts the game with the virus.
Chance of Immunity Default: 10%	The probability that a player is assigned immunity when s/he joins the game. **Note**: Players with red hair are immune. Immune players cannot pass on the virus.
Chance of Infection Default: 90%	The probability that the virus will pass from one player to another when players meet.
Incubation Time Default: 120 seconds	The length of time it takes a player to get sick after getting the virus. **Note**: It takes Patient Zero 30 seconds longer to get sick.

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d1. **Visual step-through – Patient Zero Absent or Idle**. If you are alerted that Patient Zero is not meeting other players, *and* you are not able to ask Patient Zero to start meeting other players, then:

1. Click the alert icon and/or see a prompt for reassigning Patient Zero. **2.** Select **Reassign** and announce that the gameplay so far was a practice round. *The game will pause automatically*.	**3.** Select a new Patient Zero. **4.** Select **Run Game**. *Players' screens will show zero meetings.*

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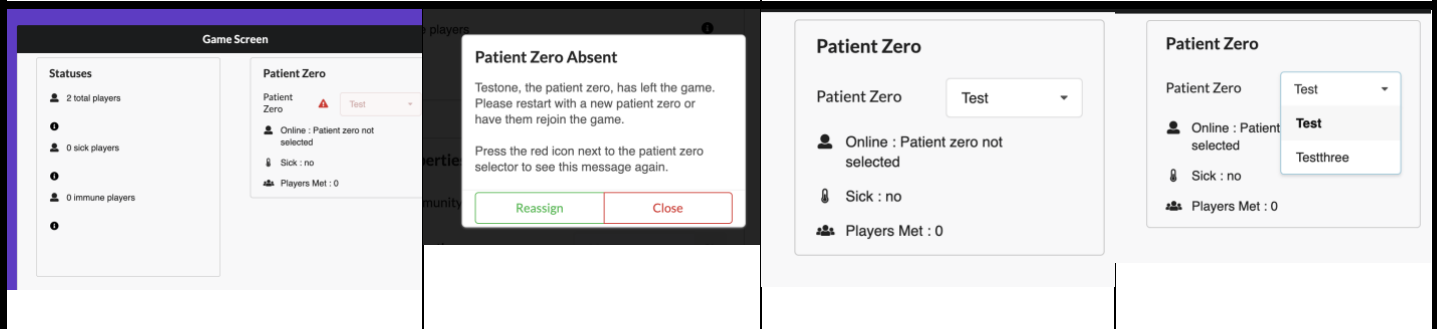
d2. **Visual step-through – Rerun Game.** To rerun the game for Round 2 for the same game parameters:

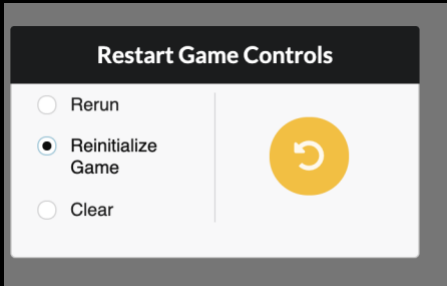| **1.** Select **Rerun Game**.	**2.** Select **Rerun**.

?!
Other issue?
Take a deep breath and
Go to
education.mit.edu/psims/FAQ

d2. **Visual step-through – Reinitialize Game.** To rerun the game with the same players and new game parameters (if there is some problem):		
1. Select **Reinitialize Game**.	**2.** Select **Reinit**.	
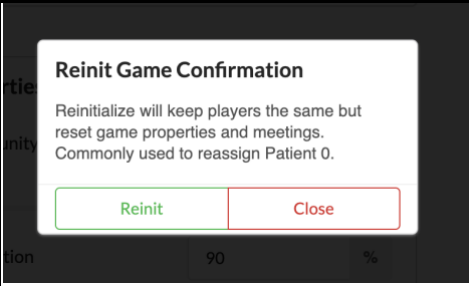
d2. **Visual step-through – Clear Game.** To keep the game code but clear the players and game parameters (between class periods to reuse game code with a new class):		
1. Select **Clear Game**.	**2.** Select **Clear**.	

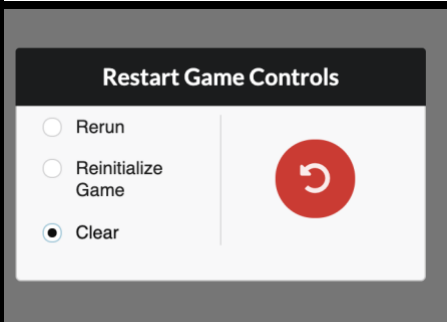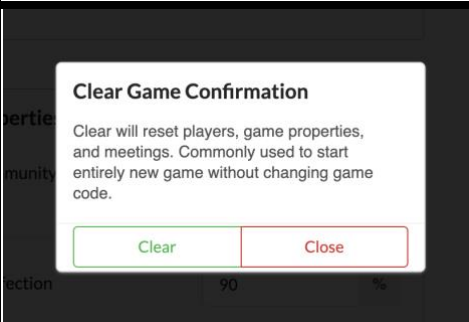| e. Steps to run the game - Round 1	

Start	Pick a player to be **Patient Zero** by selecting a Display Name from the dropdown menu.
	    Note: Try to select someone who will be quick to meet other players, if it's possible to identify a player by the Display Name.
	
	Tell players to get up from their seats.
	
	Select **Start Game.**
	    Note: Once a game starts, it is not possible for the host to change the game parameters, or for new players to join the game.
	
	Select **Run Game.**

During	Keep an eye on the host dashboard in order to:
	    ▪ Accept rejoin requests.
	    ▪ Receive alerts if **Patient Zero** is absent, in which case the host should make sure the Patient Zero rejoins the game.
	
	If players ask questions, say "Good question!" and remind them that they'll have the chance to ask each other questions after this round.

End	When a majority (or most) of the players are sick, end the round by selecting **Pause Game** and ask players to take their seats.

f. Key Terms

- ✓ **Transmission**
- ✓ **Patient Zero**
- ✓ **Probability**
- ✓ **Immunity**
- ✓ **Incubation Period**
- ✓ **Carriers**
- ✓ **Asymptomatic**
- ✓ **Quarantine**
- ✓ **Epidemiology**
- ✓ **Genetic Predisposition**

During the discussion, players will describe many of the concepts in this list without necessarily using the exact terms listed here. The job of the facilitator is to give names to these core learning goals as players 'discover' them.

For example, when a player suggests, "players don't get sick immediately after meeting a sick person," it might be appropriate for a facilitator to respond, "So, you're wondering if there's an **incubation period**" and write the term on the board.

g. Discussion overview

The job of the facilitator is to initiate a student-driven discussion, while also pointing out concepts and questions that are important for players to explore in the next round(s) of gameplay. To do so, a facilitator:
- ▪ Records notes on a chalk/dry-erase board (try organizing notes as observations, questions, guesses, ideas, proposed experiments).
- ▪ Names the target (Key Terms) concepts as players describe them.
- ▪ While players are seated, unpauses the game (select **Run Game**), and points out the **Meetings** list on players' screens that shows who each player has met.

The facilitator *embraces all players' ideas* (even those that are off track) and *gently guides players to a consensus* about how the game will be played in the next round(s). The following table outlines how a discussion shifts from observations about each **individual's experience**, through a process of analyzing players' **collective experience**, to a proposed experiment that will answer **players' questions**.

		Common facilitator questions	**Common player responses** [and related Key Terms]

Observations	Collective experience ← Personal	What happened?
		    How many people did you meet?
		    What happened to you?
		    What did you notice about other
		      players?
		    What did you do when you noticed
		      people getting sick?
		
		What questions do you have?
			I met people and got sick.
			I got sick when I _____.
			The virus spread quickly.
			
			Why didn't some people get sick?
			Where did the virus come from?

Hypotheses	Guess ← Analyze	How do you think the virus spreads?
		
		Why? Develop a theory.
		    How did it start?
		    Did you notice any pattern?
		    What causes some players to get sick?
			People get sick if they meet a lot of people.
			People get sick when they meet a sick person [**Transmission**].
			_____ started it [**Patient Zero**].
			It's random [**Probability**].
			Maybe it starts when two particular people meet.
			Maybe people can spread the virus when they're not sick [**Asymptomatic Carriers**].
			Maybe there's a time lag between meeting someone and getting sick [**Incubation period**].
			Some people can't get sick because _____ [**Immunity**].

Experiment Design	Develop an action plan	Now you have a chance to play the game again, with the exact same starting conditions.
		    How will you play differently in order to answer your questions and test your ideas about how the virus spreads?
		    How might you limit the spread of the virus?
			Let's each meet one person and then wait until someone gets sick.
			Get into groups and only meet people in your group.

Round 2		To initiate a new round with the same starting conditions (Patient Zero, etc.) as the first: Select **Rerun Game**, select **Rerun** again at the prompt, and select **Run Game** at the next opportunity. To initiate a round with different starting conditions and the same players as the first: Select **Reinitialize Game**, select **Reinit** at the prompt, and change the game parameters before hitting **Run Game.**	
Repeat		If there's time, the facilitator can run more rounds, ideally reaching a point when players identify all the "Key Terms" concepts and understand how those concepts relate to the game experience.	

i. Reflection	j. Common prompts
The purpose of the reflection is to help players learn that systems are made up of many parts, and problems are solved by many people, each with different perspectives. Additionally: ■ Each player's participation is important – both in playing the game and in discovering how it works. ■ The concepts this game explores are important and connect to disciplines beyond epidemiology.	What was this game about? What was the objective? Can anyone summarize how the virus spread? Is the game a realistic model/simulation? How might we limit the spread of a virus in the real world? What are the ethical implications of your ideas? What did we learn about the spread of disease? How did we work together to answer questions? What questions do you still have?