

Module 0 Recap

In the last module we:

- Talked about the ways pathogens can be passed from person to person.
- Touched upon the duration of illness and symptoms of diseases caused by these pathogens- in other words, their **natural history**.
- Learned the difference between being **infected**, the state of harboring an infectious disease agent, and
- Being **infectious**, being able to spread an infectious disease agent to others.

***** Optional *****

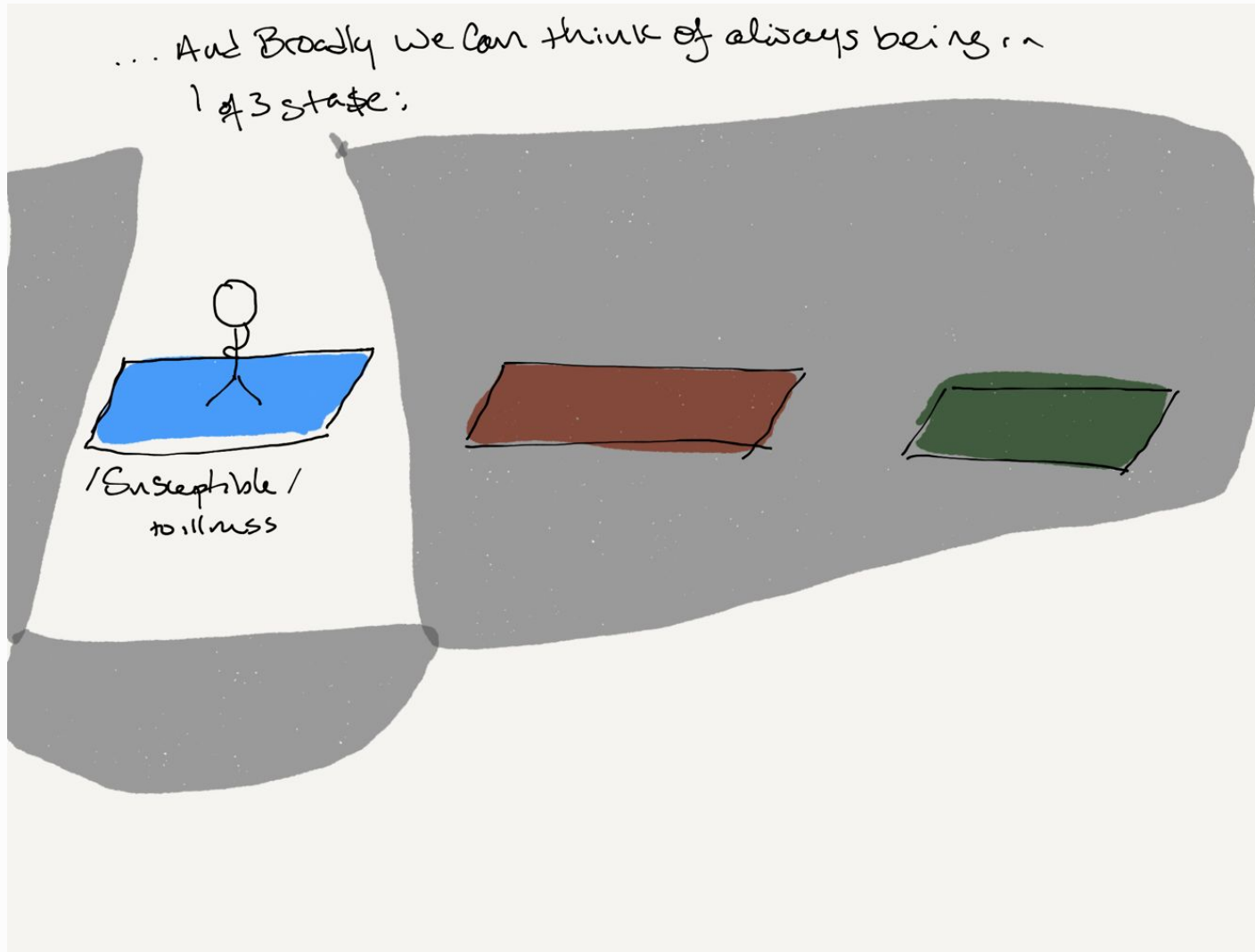
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We will begin this section by learning how to break up a disease's natural history into discrete steps.

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*Stephanie, start here. ***
*Scroll***

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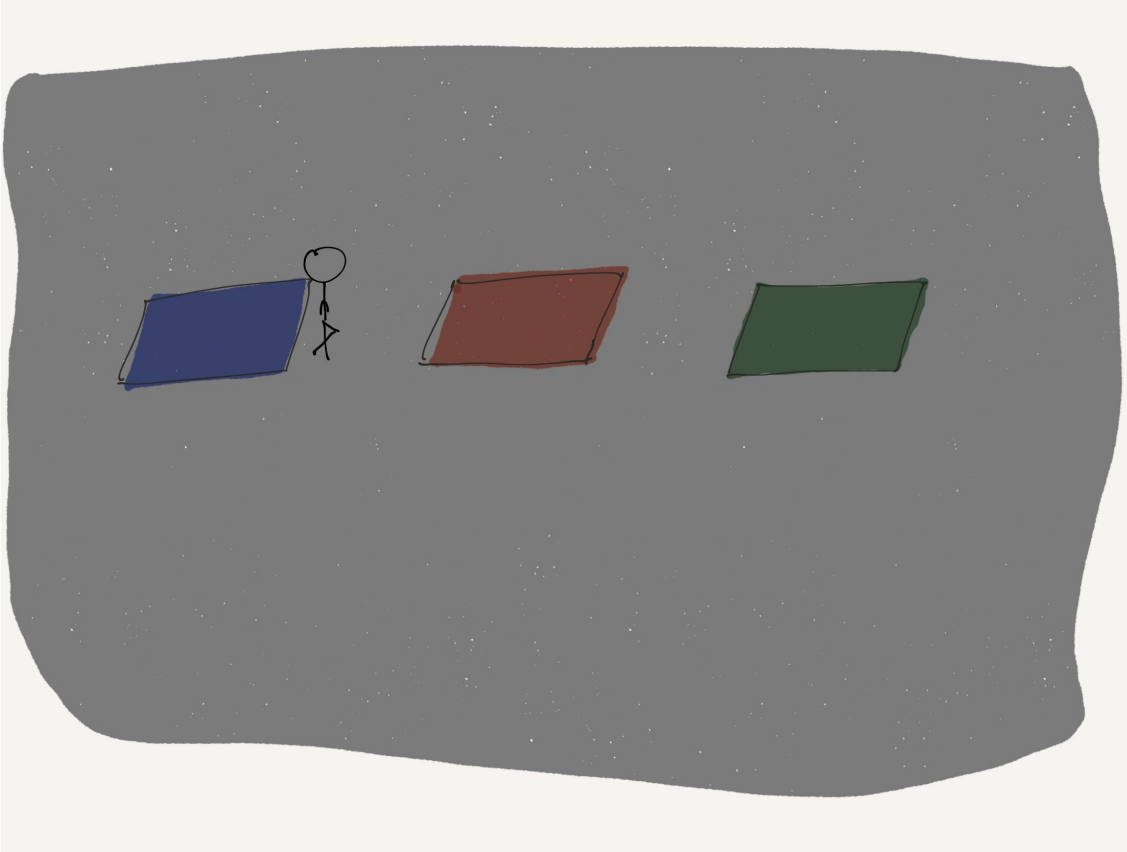
Broadly, we can think of existing in one of three states:

Susceptible (S) to an infection

base's natural history into discrete steps

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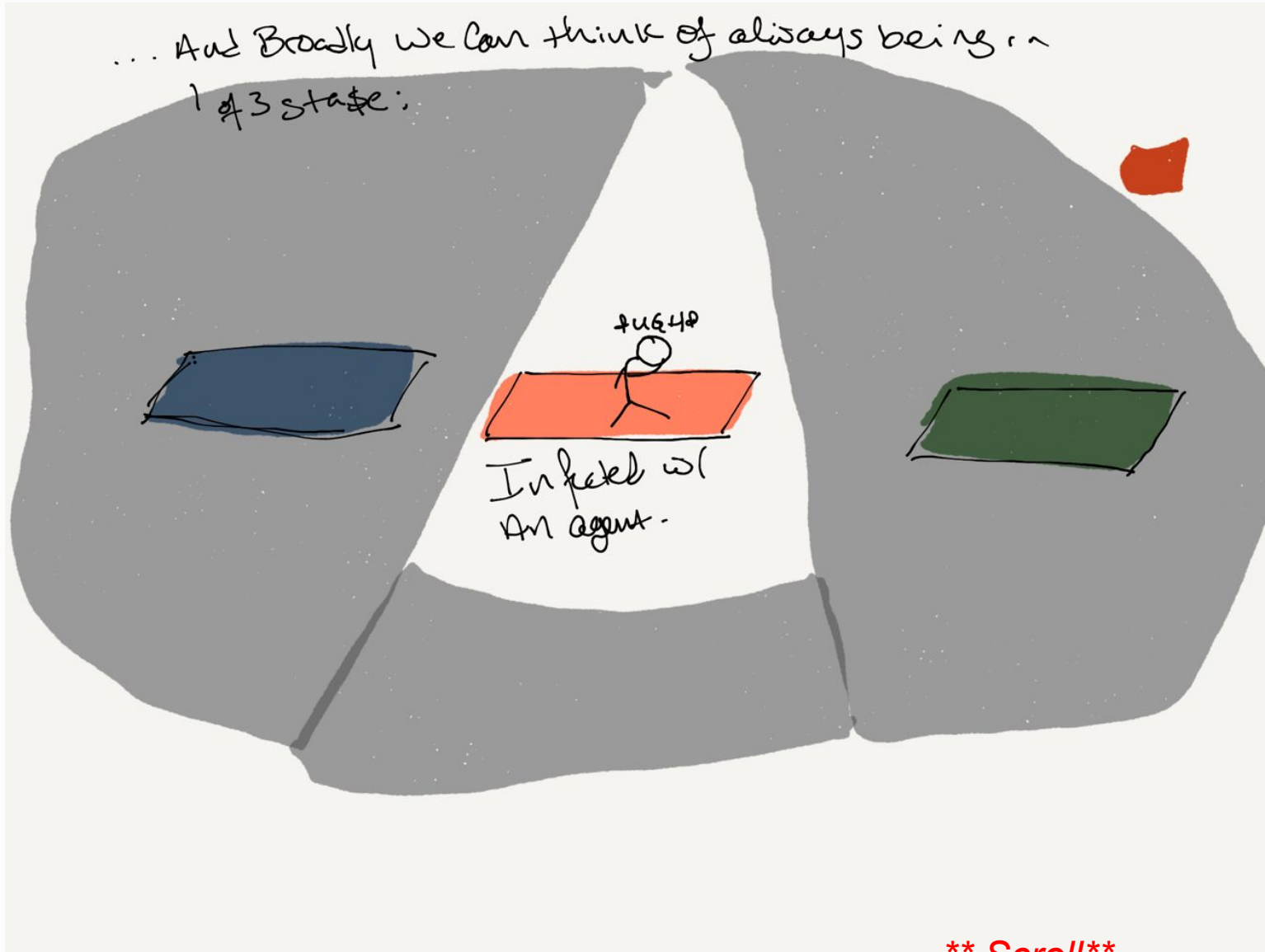


***** Stick person walks to the next rectangle*****

Break up a disease's natural history into discrete steps.

***** Scroll*****

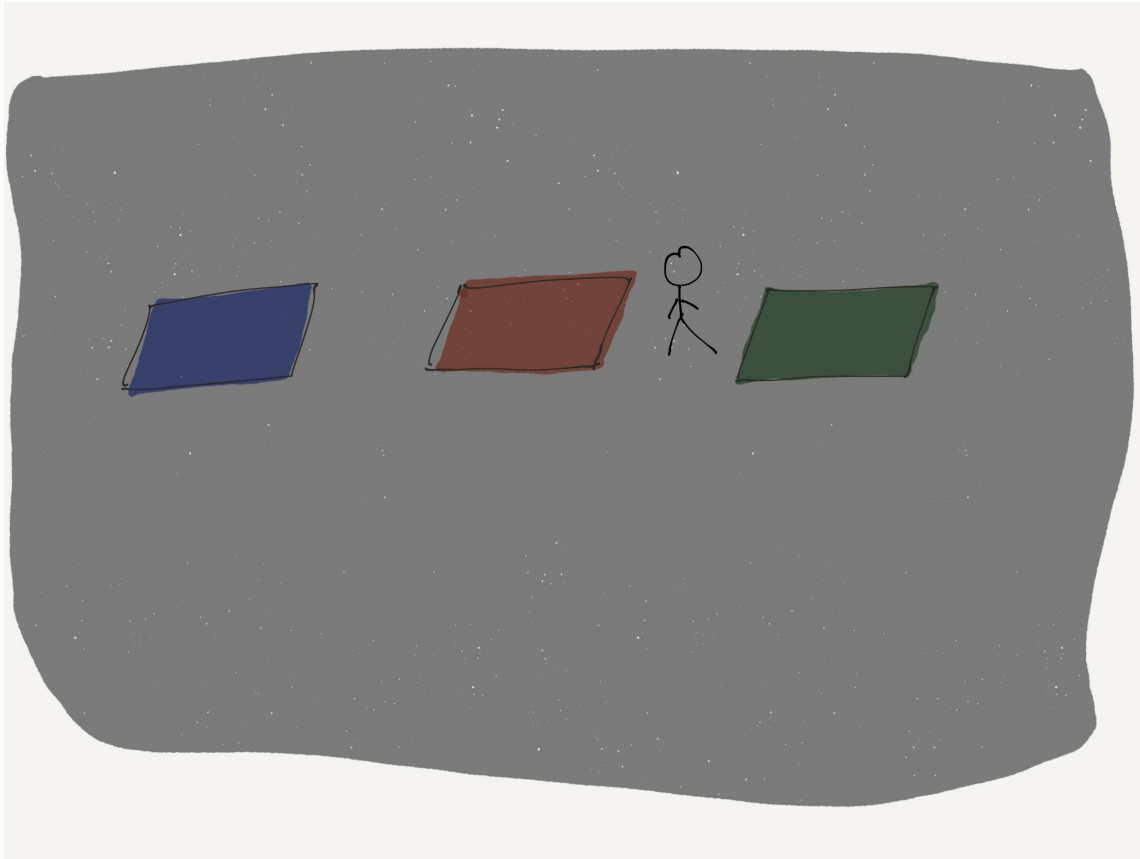
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Being **Infected** and **infectious** (I)

natural history into discrete steps.

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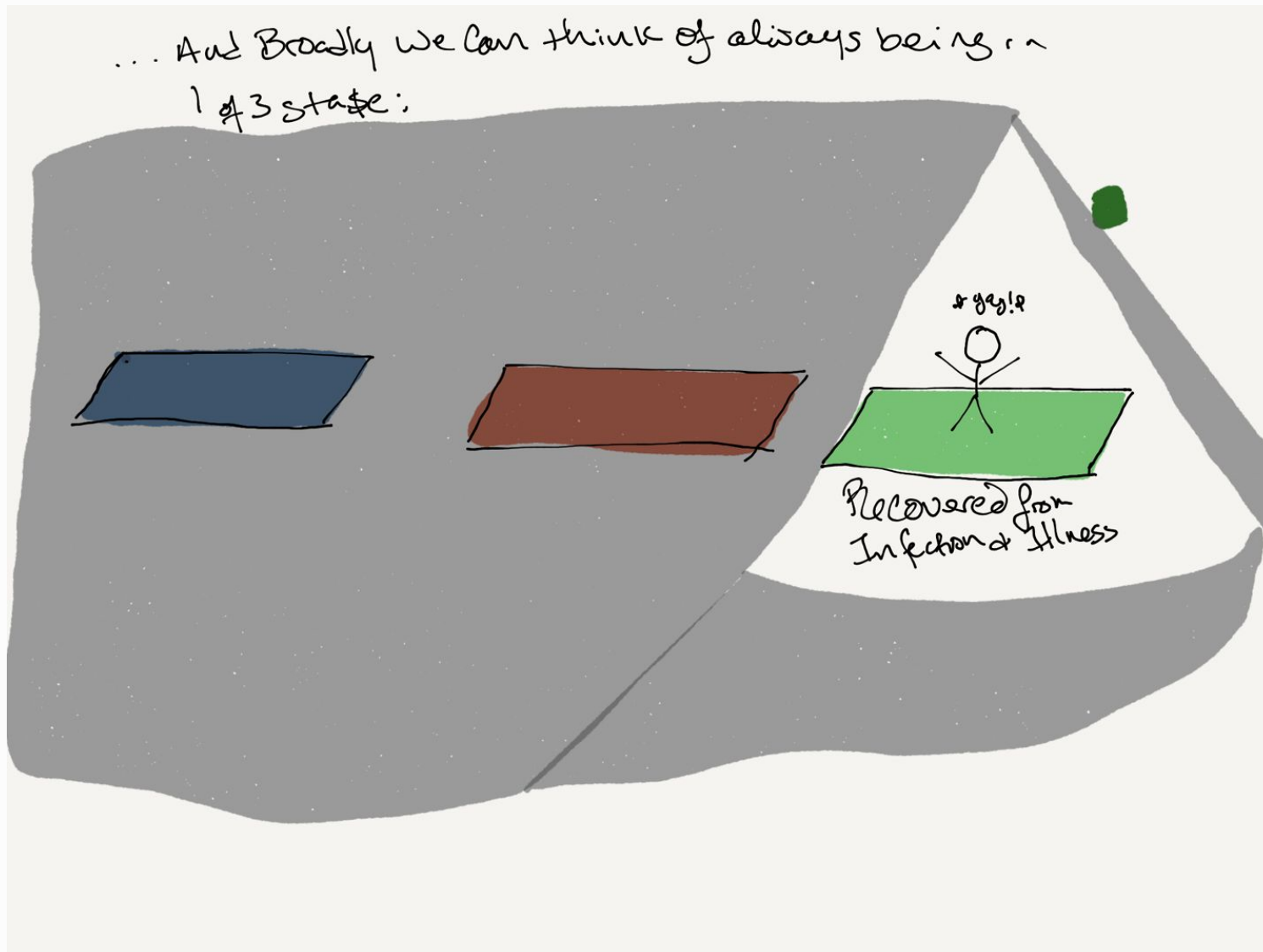


**** Stick person walks to the next rectangle****

Break up a disease's natural history into discrete steps.

**** Scroll****

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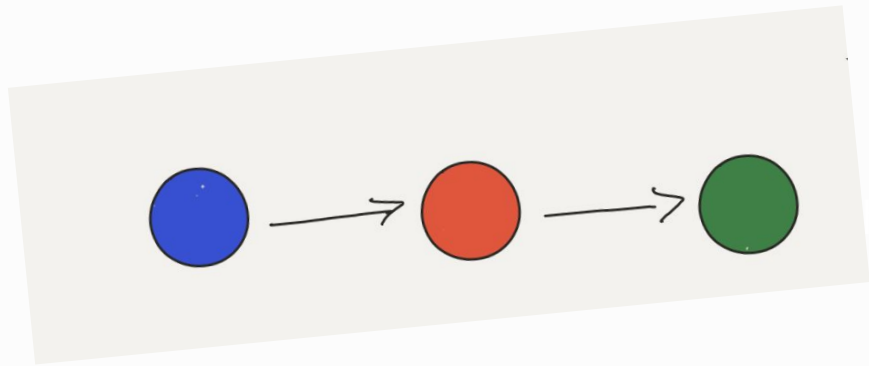


And **recovered** from the infection and **removed (R)** from the group of people who are susceptible to the illness.

* we will discuss situations where this always isn't the case later, but for our purposes now- these three categories are sufficient.

**** Scroll ****

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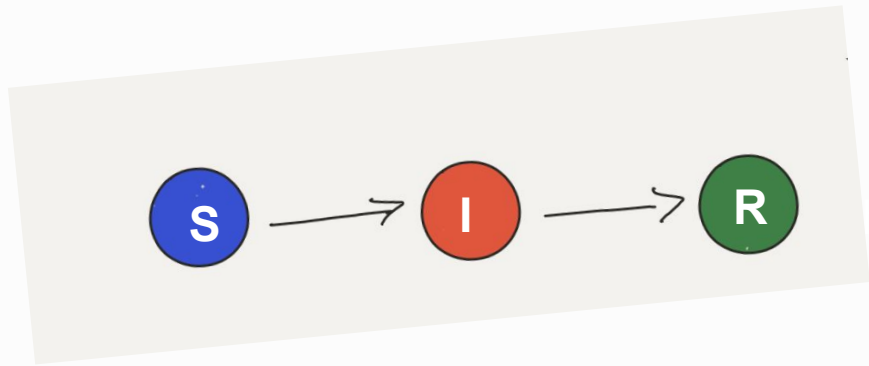


This type of categorization is the foundation of a type of models called a **compartmental model**.

how to break up a disease's natural history into discrete steps

**** Scroll ****

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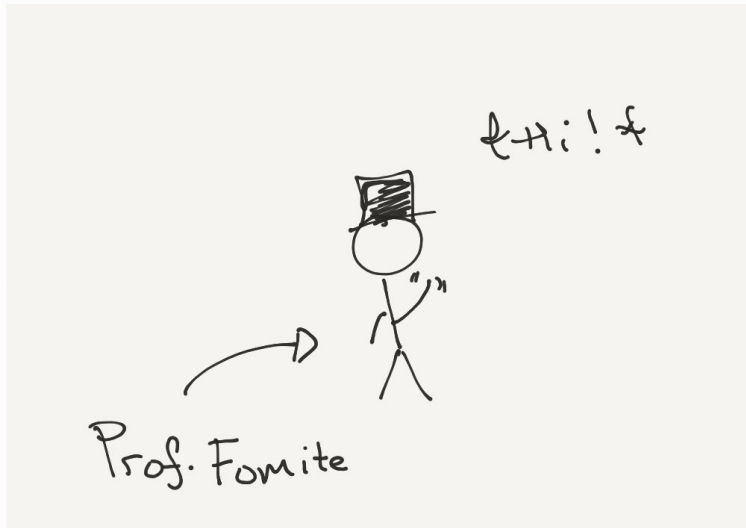


These models are handy because they are easily adapted to simulate different transmission scenarios.

how to break up a disease's natural history into discrete steps

The model type most often used is an **Susceptible, Infected, Recovered Model** or a **SIR Model**.

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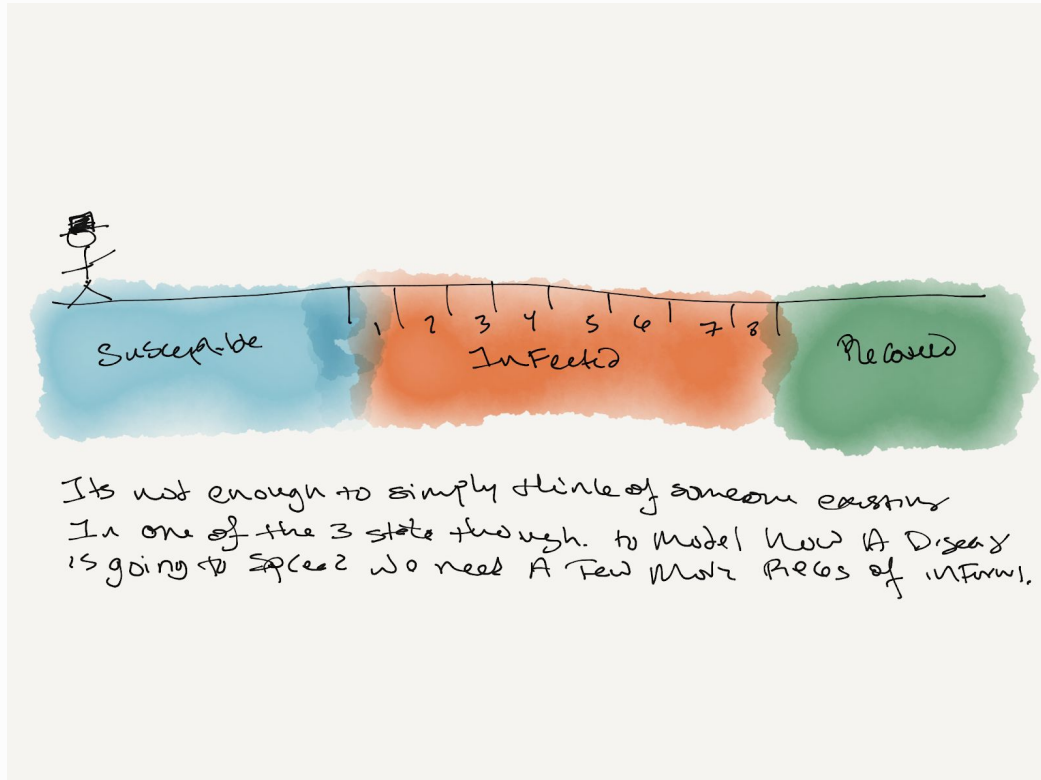
Let's take a step by step walk through an SIR model.

g how to break up a disease's natural history into discrete steps

**** Stick figure person walks on to screen and waves hello****

**** Scroll****

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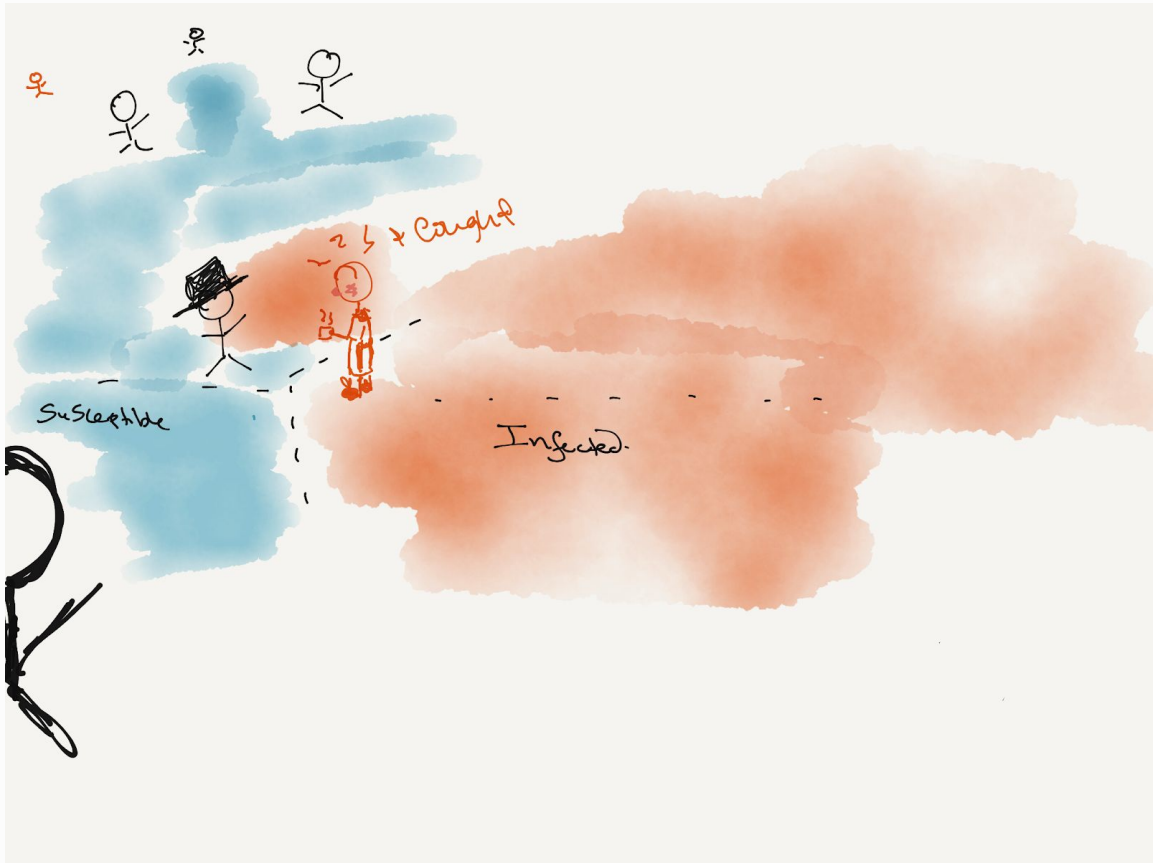
We begin by being susceptible to a disease.

break up a disease's natural history into discrete steps.

**** Stick figure person starts at the beginning of the YBR and walks towards the infected section, as a sick person walks perpendicularly towards them from the distance****

**** Scroll****

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As we move about our life- we may interact with someone who is infected with an agent, and is able to transmit it to others.

cup a disease's natural history into discrete steps.

**** sick stick person coughs- has a grey cloud around them that Prof F steps into. They meet at the boundary of Susceptible and Infected****

**** Scroll****

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From this chance encounter, we become infected with the illness too. Soon we begin to feel ill, and pass from the “susceptible” state to the “infected/ill” state.

**** Stick person steps over the boundary between S and I, is slouched and coughing. Pausing at day 1****

**** Scroll****

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We will then remain ill and infectious for a particular number of days that are specific to our illness.

break up a disease's natural history into discrete steps.

***** Slowly starts to walk down the path, stopping/pausing at each new day. As the days progress, he starts to cough less and stand more upright*****

***** Scroll*****

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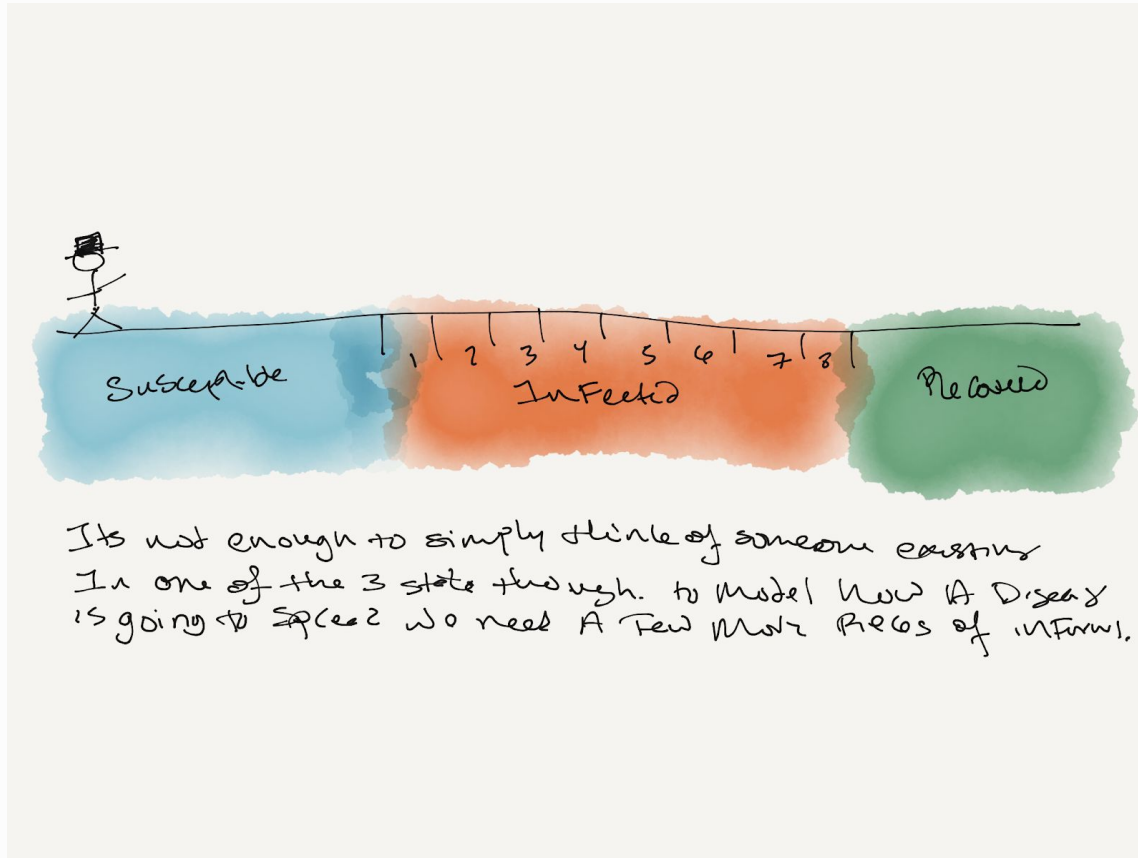


After a certain number of days we are no longer sick, our body has healed and we are now considered “recovered” and “removed”- not able to get the illness again. We transition to the “removed” state, where we will remain for the rest of our life.

*** stands upright, cheers/throws their heels/ throws hat in the air... etc. walks through recovered, and turns grey? Meaning not susceptible anymore?— open to suggestions***

*** Scroll***

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Let's watch the process all the way through, one more time.

up a disease's natural history into discrete steps.

**** stitch everything together... add subtitles or annotations? ****

**** Scroll ****