

## Statspital Game Instructions:

Go to the website: <https://stat2games.sites.grinnell.edu> and select the **Statspital** tab, and then click the **Play Statspital** button.

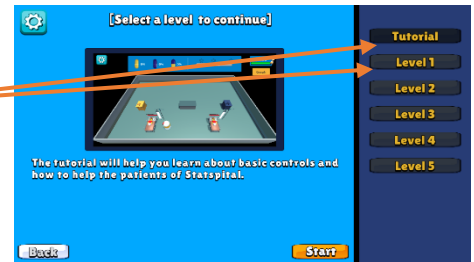
- Click **Instructions** to familiarize yourself with the controls and objectives.
- Enter a **Player ID** and a **Group ID**. Any combination of alpha-numeric characters will work. *Note that this ID will be public on the web.*
- Click the blue **Play** button:



This will bring you to the **Menu** page. There is a tutorial and five levels that can be completed within this game. You can select any level you want to play.

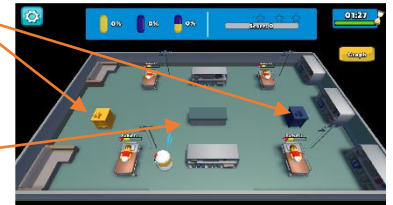
- Click on the blue tab to complete the **Tutorial**. Then play **Level 1**.

**Level 1 Goal:** Cure patients as quickly as possible using blue medicine, yellow medicine, or combined medicine.



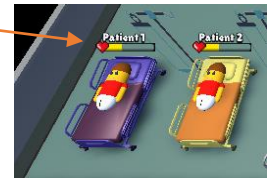
**Select medicine:** Use [arrow keys] or [WASD] to approach the blue or yellow medicine table. You can pick up a yellow pill or a blue pill.

- Use the **space** tab to pick up or give medicine.
- To **combine medicines**, put yellow and blue pills on the middle table and press **enter**.



**Patients:** The bar above the patient indicates the health of the patient. If a patient is cured, the bar will turn green.

- The number of patients, the type of patient, and how they respond to medicines will change based on level.



**Effectiveness of medicine:** After giving a patient a certain type of drug, you can see the average effectiveness of each medicine at the top of the screen. There is variation in the effectiveness each time you give a pill. Also, different levels and patient types have different efficacy.



**Time:** You can check the remaining time at the top right corner.

**Data Visualization:** On the upper right corner of the screen, click on the **graph button** or **G** to go to graphs.

**Accelerate:** Press the **left shift** to accelerate.

**Pause/Menu:** On the top left side of the screen, click on the **gear symbol** to pause the game and select other menu options. After pausing, you can click on the **settings button** to change the volume and check the movement settings. Click the main **menu button** to return to the main menu, the **restart button** to restart the level, or the **resume button** to resume the game.

**Statspital Variable Descriptions:** There are two data sets for the Statspital game. The summary data set provides an overview of the results of each game, while the detailed data set contains the individual-level data points as well as more variables.

Variable Name	Type	Description
GameNumber:	Integer	Each game is assigned a unique game number
Date	Date	The date and time the game was played, it has a Year/Month/Day/Hour: Minute format
PlayerID	Categorical	Any alpha-numeric term used for each player
GroupID	Categorical	Any alpha-numeric term used for each player or group. Often instructors ask all students in the class to use the same GroupID
<b>Potential response variables</b>		
FinishHealth	Quantitative	The health of a patient after the game is over-ranges from 40 to over 100
Health	Quantitative	The health of a patient at a particular point in time-over 100 means the patient is cured
Time	Quantitative	The time in seconds that it takes to finish the game or the timer runs out. Range from 0 to 150
Win	Categorical	Indicator variable that indicates whether a game is won or not. 1 indicates won and 0 indicates lost
NumHealthy	Quantitative	The number of healthy patients after the game is over-ranges from 0 to 6
Score	Quantitative	Score that a player gets after finishing the game. This can range from 0 to 230
<b>Potential explanatory variables</b>		
Level	Categorical	Level of the game. There are five levels
Patient	Categorical	An integer id is assigned to each patient that can range from 1 to 6.
PatientType	Categorical	An integer that indicates the type of patient. 1 indicates an original type of patient, 2 indicates patients in the blue beds, and 3 indicates patients in the yellow bed
YMed	Quantitative	Number of yellow pills given to a patient in a particular game
BMed	Quantitative	Number of blue pills given to a patient in a particular game
ComMed	Quantitative	Number of combined pills given to a patient in a particular game
NumPatient	Quantitative	The number of patients in the game level- ranges from 4 to 6
Med	Categorical	The type of medicine given to a patient with each dose. Can be either, YMed (yellow pill), BMed (blue pill), or ComMed (combined pill)
DoseNum	Categorical	The nth number of pills given to a patient
PriorMedHealth	Quantitative	Patient health before being given a type of medicine - ranges from 40 to 100
POSTMedHealth	Quantitative	Patient health after being given a type of medicine -ranges from 40 to over 100

Sample student handouts, instructor notes, and research activities for some games are posted here:

<https://drive.google.com/drive/folders/1UyMtxFthjD57UyssqUL1poXbmlRxl1ZM>.

## Potential Research Questions:

### Understanding Plots and Means

T-test:

- On level 1, Is there a difference between the expected efficiency of the yellow and blue pills.

Chi-Square Test or Two Proportion Test.

- On level 1. Do people who identify as “gamers” have a different probability of winning than those who do not consider themselves “gamers”. In the Group ID, the “gamers” can include a G while others can include an NG. For example, Stat101G and Stat101NG.

Interactions:

- On level 3, does the effectiveness of the yellow and blue pills depend on the type (color) of patient?

ANOVA:

- On level 1, Is there a difference between the expected efficiency of the yellow, blue, or combined pills
- Is blocking by PlayerID better than a completely randomized design?
- Does the expected completion time change depending on a student's intended college major, gender, or gaming abilities?