

Background

Breast cancer is a type of cancer that starts in the breast. Cancer starts when cells begin to grow out of control. For students who study biology, cancer is related to a mutation in gene called oncogene, leading to uncontrolled cell division. For more information, please click <https://www.cancer.org/cancer/breast-cancer.html>

For every type of cancer, there are two types. Benign and malignant. Benign tumor can be cut and there is a high chance of full recovery while malignant tumors spread to other tissues, so most patients will receive treatment such as radioactive treatment to control tumors instead of having a surgery.

In breast cancer 's case, most tumors are benign, so there is a very high chance of full recovery if patients receive proper treatment on time. As a result, we hope potential female patients can have the awareness of prevention and regular self-diagnosis, also including young women as there is an increasing trend of younger patients. We hope on-line games, a novel way of public education, will align with the interest of young people and therefore call for more attention.

Firstly, we will introduce you with some basic procedures of breast cancer. Please note that the real situation and treatment will be more complicated and tailored to every patient 's needs. Logic of treatment in this game is ideal, and only include common procedures.

Treatment procedures

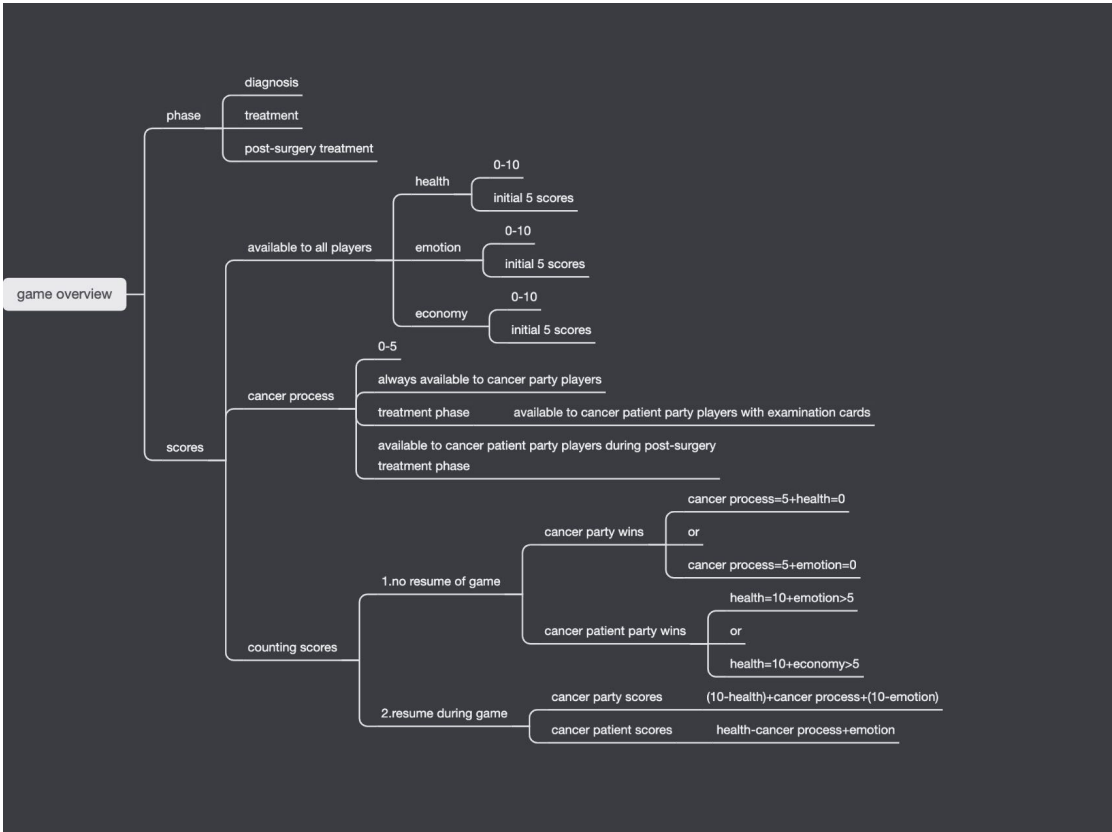
To begin with, there is often self-diagnosis. This is relatively simple: women will touch breasts and check whether there is a lump or any discomfort, such as pain, inflammation of breasts. After successful self-diagnosis, patients will go to outpatient service, and undertake a series of examinations. In this game, there are three examinations. Ultrasonic examination and X-ray examination can check whether there is tumor, and CT scan of the full body to see metastasis(tumors spreading to other tissues) of malignant lump. Those three examination also apply to real life. From the moment with lump, patients might feel unwell or painful. As a result, they might potentially take in aspirin,morphine or use fentanyl patch to alleviate pain and inflammation. Notably, fentanyl patch has a much stronger effect than aspirin or morphine.

Patients with benign or malignant tumors will receive different treatment. Patients with benign tumors will receive cutting lump surgery or cutting breasts surgery. Cutting breasts is not necessary for all patients, but it can lower the chance of getting breast cancer later. Patients with malignant tumors will receive treatment such as anti-estrogen therapy, immunotherapy, radioactive therapy or chemotherapy to prevent further metastasis. Those treatment can also be used by patients with benign tumors to reduce size of tumors before surgery or after surgery to reduce risk of getting breast cancer again

Cards Rules

In this game, Players can either be cancer party and cancer patient party. Breast cancer treatment is split into three sections: diagnosis, treatment and post-surgery treatment. There are 4 scores

and two ways of counting scores. At the beginning, breast cancer patient party has 5 health scores, 5 economy scores, 5 emotion scores, all with maximum 10 scores. Those three scores are shown to all players. Breast cancer party also has cancer process from 1 to 5, and cancer process is only available to cancer patients with examinations cards in diagnosis phase. Cancer process is available to all players during post-surgery phase. Players may start game at any phases or stop at any phases. System will shift phases according to the following standards.



Every time you get a new card, you may use this card or hold it for next turns. Every time, players may only use one card.

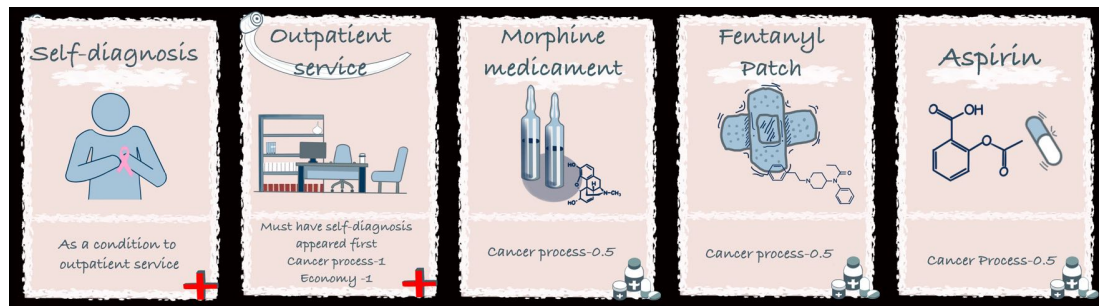
Generally, pink cards are good for patients while red cards are bad for patients. While in every phase, two parties have different types of cards, overall chance of counteracting the other party is equal to two parties.

In diagnosis and post-surgery treatment, players also have life cards. Emotion and economy scores will be used for treatment. We assume during treatment phase, patients would only focus on treatment. All cards are shown below.



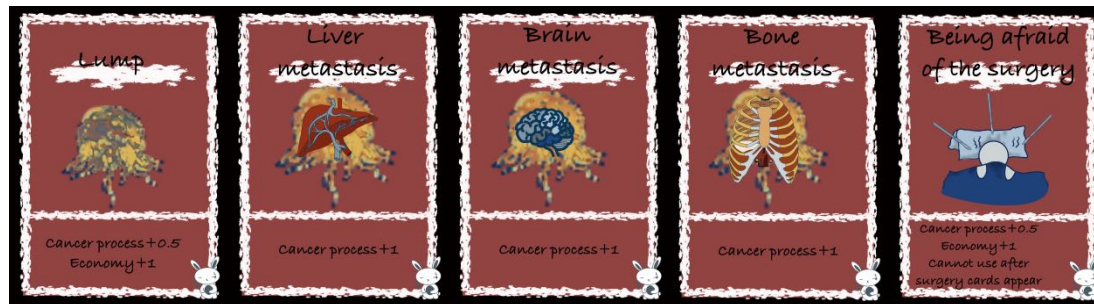
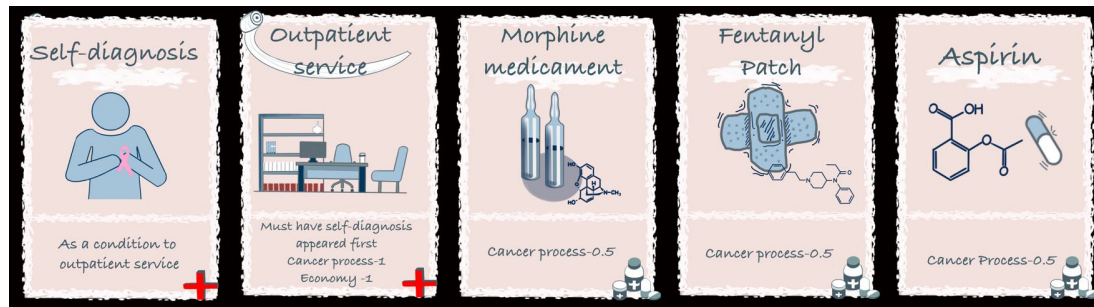
Diagnosis phase

Cards for diagnosis phases are shown below. Please note there are two cards with conditions. Cancer party players may use “afraid of going to hospital” only before cancer patient party players use “outpatient service”. Cancer patient party may only use “outpatient service” after using “self-diagnosis”. When cancer process is greater than 2, or there is “outpatient service”, game shifts to treatment phase.



Treatment phase

Cards for treatment phase are shown below. Please note there are four cards with conditions. Cancer party players cannot use “afraid of surgery” after cancer patient party use “surgery of cutting off the lump” or “surgery of cutting off the breasts”. Cancer patient party may only use “ultrasonic examination” and “X-ray examination” after “lump” appear. Breast patient party may only use “CT scan of the full body” after “live r metastasis”, “bone metastasis” or “brain metastasis” appear. When cancer process equals 0 or there is surgery cards, game shifts to post-surgery process.



Post-surgery phase

Cards for post-surgery phase are shown below.



Being
overwhelmed



Emotion-0.5
Economy+1



Lump



Cancer process+0.5
Economy+1



Pain



Health-1
Economy+1



Post-surgery
depression



Emotion-0.5
Economy+1

